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November/December 1977

VOL.4 NO.6

New Jersey OUTDOORS

Reflections From a Ghost Mine <i>By Jim Fitzsimmons</i>	2
Spectacular Rock Show in Franklin <i>By Laura Henning</i>	3
Match Wits with Winter Crows <i>By Jeff Bonnell</i>	6
Patch Hunting <i>By John Gurzo</i>	7
My Best Shot <i>By Robert L. Bruns</i>	8
Almost Like the Early Settlers— Close to Home <i>By Anthony F. Capaccio</i>	9
To Drive a Rabbit <i>By William Honachefsky</i>	10
Eulogy for My Friends <i>By Bob Byrne</i>	13
Active Conservation Education in a Wildlife Refuge <i>By Stephen J. Zipko</i>	14
Select and Cut Your Christmas Tree this Season <i>By Ronald J. Sheay and Fred E. Johnston</i>	17
More Than a Hobby <i>By John C. Wells</i>	18
A Bus to Island Beach	20
The Beauty of Leaves <i>By Art Weiler, Jr.</i>	24
Endangered Species Art Contest <i>By A. Morton Cooper</i>	28

FEATURES

You're a Sportsman when . . .	4
Environmental News	16A
Cover Captions	32

from the editor

The Hunting Experience

In This Issue

What is it? I asked several hunters about this "experience" that quickens the pulse as the autumn leaves tremble and fall, that monopolizes thoughts and conversations until that day or week spent in the woods and fields. Unlike the stereotype that persists, hunters come in all sizes, shapes, and colors. Young, old, educated, and not so educated. Gentlemen hunters and some ladies too. And quite a few "slob" hunters who tend to reinforce the stereotype.

It's not an "in" form of recreation like tennis, jogging, or bicycling. And a great many people from all walks of life, especially urban and suburban dwellers, are dead set against the killing of game for sport. But it persists . . . perhaps like an ancient ritual or a cultural trait that surfaces every autumn.

What is it? One articulate hunter, after some thought, replied: "It is a very personal experience — difficult if not impossible to share with a non-participant. To me it is a re-enactment, a re-establishment of my relationship and position in my world. It gives me a feeling of belonging to the ecosystem, not unlike tilling the soil, growing a plant, and picking and eating the fruit."

Another reply . . . "It is 'freedom' from the social and economic pressures of the plastic world that have entrapped modern man. It is an opportunity to participate in the ecosystem and to reclaim my place in the food chain."

Still another reply . . . "The hunt is a return, if only for a brief moment, to our primordial past; a time when man considered himself *a part of* and not *apart from* the natural world. It is the renewal of an ancient kinship between predator and prey. Man hunts because the essence of his being dictates that he must — for anthropologists have shown us that man is man because he was and is a hunter."

These comments bring to mind a quote from Robert Ardrey's latest book titled, *The Hunting Hypothesis*, which I've included below:

"For millions of years we survived as hunters. In the few short millenia since our divorce from that necessity there has been no time for significant biological change — anatomical, physiological, or behavioral. Today we have small hope of comprehending ourselves and our world unless we understand that man still, in his inmost being, remains a hunter."

But perhaps the authors included in the "Hunting Experience" section of this issue will describe in simpler and more direct terms what this day in the field means to each of them.

Some New Jersey mining history in and about the town of Franklin, read *Reflections From a Ghost Mine* by Jim Fitzsimmons and *Spectacular Rock Show at Franklin* by Laura Henning.

As discussed in the editorial above, some individual hunting experiences are presented in the following articles: *Patch Hunting* by John Gurzo; *My Best Shot* by Robert L. Bruns; *Match Wits With Winter Crows* by Jeff Bonnell; *To Drive a Rabbit* by William Honachefsky; and *Just Like the Early Settlers — Close to Home* by Anthony F. Capaccio.

If you're into decoy carving, read *More Than a Hobby* by John C. Wells. And A. Morton Cooper, chairman of the Ocean County Environmental Commission, sent us the prize-winning student entries in the *Endangered Species Art Contest*. In the article *Eulogy for My Friends*, Bob Byrne speaks fondly of some old companions.

In keeping with the coming holiday season, Forester Ron Sheay and Fred E. Johnston tell us where and how we can *Select and Cut a Christmas Tree This Season*. This past summer DEP, assisted several other agencies, administered a highly successful Island Beach Shuttle

which provided an energy-saving service for New Jersey citizens traveling to Island Beach State Park. Read *A Bus to Island Beach* on page 20.

An outstanding conservation education program in one of our New Jersey school districts titled, *Active Conservation Education in a Wildlife Refuge* is described by biology teacher/author Stephen J. Zipko. The author is the recipient of the Outstanding Biology Teacher of America award for 1977, and has recently received the Outstanding Achievement Award in Conservation Education.

Be artistic, creative . . . make leaf prints. Read *The Beauty of Leaves* by Art Weiler, Jr.

This issue closes out the 1977 year and with it we wish you all a joyous holiday season. *New Jersey Outdoors* picked up over seven thousand new subscribers this year which, of course, makes us very happy. So get on the bandwagon, and take advantage of our low subscription rates while they last — and give a gift of *New Jersey Outdoors* to your family and friends.



Franklin Mines then

reflections from a ghost mine

BY

JIM FITZSIMMONS



PHOTOS BY AUTHOR

***There is a "ghost" in northern New Jersey.
It doesn't haunt — yet its presence is felt.
It can't be seen — yet all know where it lives.
It isn't real — yet its reflections are observed every day.
The "ghost" is a mine. Its whereabouts — Sussex
County. Its home — the town of Franklin.***

Since the dawn of civilization man has been vitally preoccupied with extracting ore from the ground in order to make metal. Steel has emerged as the most useful of these metals, aluminum and copper next in importance, and the fourth most valuable metal to mankind is zinc.

Among our country's earliest attempts to mine and process zinc were endeavors carried out in northern

New Jersey. It was in 1852, in a village of fewer than 500 people, that America's first true zinc mine was born. The mine, in "Franklin Furnace," would prove much more than successful — it would provide the country with rich and pure zinc ore for 104 years. The area's remarkably complex geology would gain it world-wide recognition. The mining operation would generate such strong general interest in minerals and "rock-hounding" that the zeal for collecting would continue, unabated, for well over a century.

It was in 1913 that "Franklin" emerged as a newly incorporated borough out of the tiny village of Franklin Furnace. Employment opportunities in the borough, largely due to this successful zinc mine, helped spur population growth. The village population of around 500 had now grown to more than 3000.

Life in Franklin was now focused on the mine and the

Continued on page 30

... and now



PHOTOS BY AUTHOR

spectacular rock show in Franklin

BY

LAURA HENNING

Visit the Franklin Mineral Museum, tucked away in the wild and woolly Northwestern corner of the state, and you will never look at a rock the same way again. You'll wonder what that (formerly) uninteresting, ordinary gray object is made of. If you get the rock-hound bug badly, like the avid bird-watcher who must identify everything with feathers, you will have enormous pleasure naming every rock you can get your hands on.

The mineral museum is not only a mecca for local amateur geologists, but also numbers among its 25,000 annual visitors people from all over the world.

Its low-slung brick building houses a large and attractive mineral collection and a separate exhibit of fluorescent specimens. On a recent visit, when the guide darkened the fluorescent display room, loud "oohs" and "ahs" burst from an excited group of visiting sixth-graders. With good reason, for before them glowed

the most brilliant hues of orange, red, blue, purple, lemon yellow and chartreuse. (Dear reader, be warned — the most casual question to the guide will trigger a crash course in geology.)

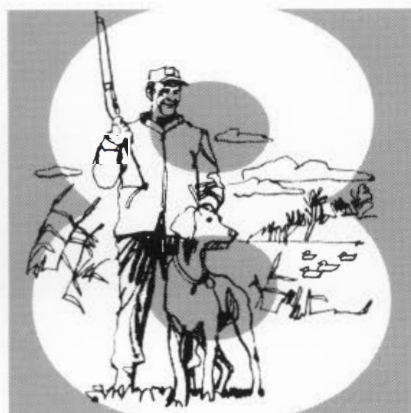
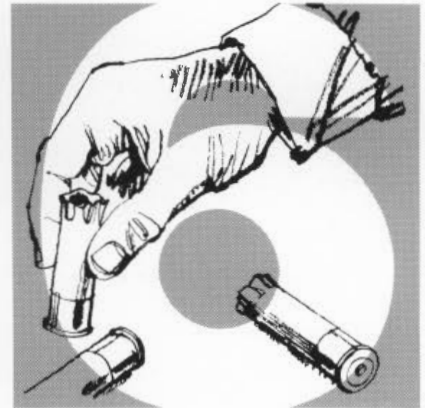
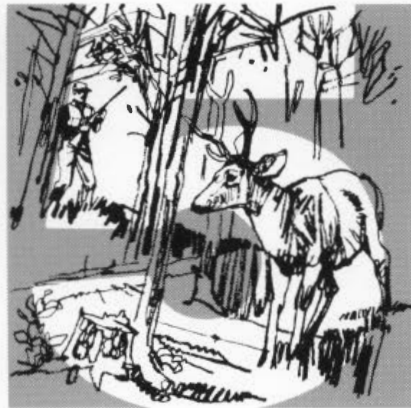
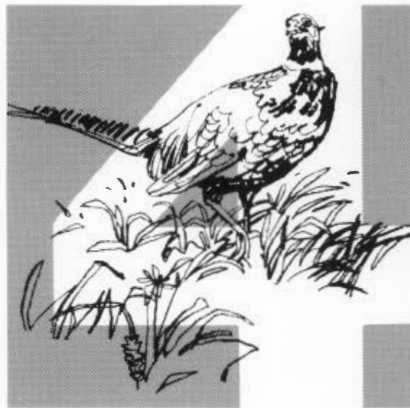
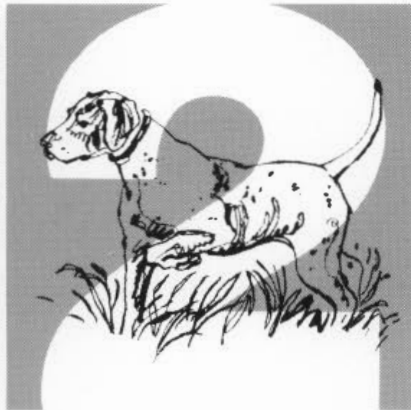
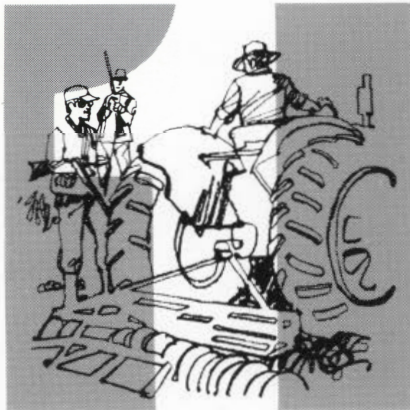
A particularly fun attraction is the realistic — uncomfortably so if you have claustrophobic tendencies — mine replica. At the entrance is a glass case containing such early mining artifacts as carbide lamps, water bottles, lunch pails, and mule shoes. For some unexplained reason there is also part of a guillotine that worked its grisly business in the area during the Civil War and up until the early 1900's, when it delivered its last *coup de grace* to a Franklin man guilty of murdering his wife.

The guide to the mine knows what he is talking about. He is Mr. Joseph Kistle, who retired 10 years ago after 27 years in the local zinc mines owned by the New Jersey Zinc Company. His explanations of mining tech-

Continued on page 31

you're a sportsman when:

- 1** You respect the rights of landowners
- 2** You use a dog when hunting birds
- 3** You know your gun and what it can do
- 4** You match your ammunition to the game
- 5** You shoot only when absolutely certain of your target
- 6** You pick up spent shells and other litter and leave an area better than you found it
- 7** You clean and care for your game properly
- 8** You can have a great day without taking the limit
- 9** You know that just being out there is really what it's all about





△ LEONARD LEE RUE III



△ HARRY GROSCH

THE HUNTING EXPERIENCE

HARRY GROSCH ▽



HARRY GROSCH ▽



match wits with winter crows

BY JEFF BONNELL

I rose stiffly as I studied the clock that announced 5 a.m. I dressed quickly into the clothes that I hoped would keep me warm in the sub-zero temperatures outside. It was Saturday, January 22, already well into the New Jersey winter crow season that had begun on January first.

My hunting partner and I were to meet at six under a previously scouted flyway, where downwind we estimated almost 300 wintering crows roosted.

I gobbled a banana and stepped out into the frigid darkness. Although New Jersey is a highly populated state, I am lucky enough to live within easy walking distance of huntable areas in Somerset County. Carrying my gun in its case and my decoys in a burlap sack, I trudged through the snow toward our rendezvous. By quarter to six, I was halfway there and could make out Scott's light as he picked his way through the woods a quarter of a mile away. I quickened my pace and shivered in my down jacket.

I arrived at our blind site before Scott, so I began to set up the decoys. "An owl, two full-body crow decoys, and eight silhouettes ought to attract the attention of a few crows," I thought. I whistled to Scott as he drew near, to indicate my presence and he whistled a reply. Together we put six decoys in surrounding evergreens and the owl in a tree. Two decoys went on an old fence while two more were



young crows

LEONARD LEE RUE III

placed on the ground. We worked quickly to keep warm as we touched up our two one-man blinds located apart so flaring crows could be caught in a crossfire.

After donning our white bedsheet camouflage smocks, I tested my crow calls. One had frozen up and I was glad I had brought both. In the last few minutes of darkness the song birds were just beginning to flit about and chirp their morning greetings. A male great horned owl was hooting his plaintive love call across the field in front of us. Scott said he hoped the crows wouldn't be distracted by this real owl.

It seemed much later than usual before we heard the first raucous caw of an awakening, flight-bound crow. Suddenly we heard him, his three or four short caws signaling the other crows to rise. I loaded my Ithaca 12-gauge pump with

skeet loads of #9 shot as Scott filled his auto-loader with field loads of #8's. That first crow was drawing near so I gave a recognition call, followed by a series of distress calls. He approached cautiously and at about 80 yards flared sharply and disappeared behind a tree line to the left. When Scott spotted two more coming straight toward us over the field, I decided to keep quiet in case it was my calling that had spooked the other crow. Suddenly a loud "caw, caw, caw" overhead startled us—it was a crow scooting past our setup, low enough for a shot. I shouldered my gun and as I did, I heard a shot. Black feathers burst from the crow as Scott's pattern caught him squarely. We watched him tumble to the ground.

I glanced over to where the other crows were last seen. They had flared at the sound of the guns

Continued on page 16

“Patch” Hunting

BY JOHN GURZO

Only a few years ago, my brother Tom and I could always find a good day's hunting within easy walking distance of our home in rural Manalapan Township. Deer and other game were easy to spot in the area, especially along the unpaved back roads at dusk.

Since the speculators and developers came in 15 years ago, however, we have had to adapt to many changes. We now have a paved road in the front of our home, a shopping center down the street, street lights, a police department, and a constant flow of traffic. However, the most difficult adjustment, at least for me, has been to watch much of our prime hunting land being turned into parking lots, backyards, and tennis courts.

The large expanses of hills, forest, and swamp that I had cut my teeth on as a boy are now gone, and cannot be brought back. Sometimes the world changes faster than we would like it to—for that fact, faster than we can adjust to it.

But some small pockets of thick brush, swamp, and undergrowth, bypassed as undevelopable, have been left behind. At first we ignored these pockets, thinking that the deer and other game had left the county, mainly because our late-afternoon and early-evening sightings had ceased. We were also skeptical because many of the pockets were along busy highways or near residential areas. The constant noise and hum of traffic would surely discourage any deer from taking up residence in those areas, we thought. What we didn't take into account was the million or so years of adaptability of the white-tail had behind him.

Convinced that great tracts of land were necessary for deer, and having no place near home fitting this concept, we elected to travel. There are



Author with deer, January 1976

PHOTOS BY AUTHOR

good deer woods in North Jersey or South Jersey that fit our criteria, but the travel time involved meant that weekends were the only time we could pursue the sport. Also, we were not quite ready for some of the opening-day crowds that were encountered.

Several years ago, Tom and I decided to re-examine some of the local terrain in hopes of locating a spot closer to home to avoid the opening day crunch and to have a spot for some after-work outings.

We scouted around, located several promising areas, put up stands, and hoped for the best. In the bow season of 1973 a local patch produced a nice 5-point buck for me. Pretty encouraging.

My optimism was further buoyed when a friend shot a fine 9-point, 140-lb. buck from a patch of woods you could almost throw a rock through, during the firearms season of 1973.

I continued to gain confidence in our decision to concentrate on “patch” hunting when in 1974 I took an 8-pointer within earshot of a major highway and eyesight of a new development. However, not entirely convinced of the advantage of “patch” hunting, I traveled to the big woods of North Jersey and took an average-size doe during the first winter bow season of 1976.

I had several shots at local deer in “patches” during the 1976 fall bow season, but failed to connect. When

Continued on page 26



LEONARD LEE RUE III

White-Tailed Buck in Rutting Season

my best shot

BY ROBERT L. BRUNS, JR.

It was deer season. A light, soft snow fell from the overcast sky and carpeted the woods of the Great Swamp Refuge. Dogwood, maple, and straggly briar bush bent to its heaping burden. The soft silence that surrounded my father and I was only occasion-

ally interrupted by gunshot; some muffled by distance, some not too far away.

We stood camouflaged in a blind not far from a trail—a deer run—and waited silently for a buck to pass our stand. The cold hours of waiting had hardened my gloved fingers into claws holding my 12-gauge shotgun and I grew ever more impatient. I looked up and down the trail as my father scanned the thick woods with his field glasses. The woods seemed barren on this day.

My father was a crack shot, but my grandfather had said he'd never make a hunter. Grandpa often took him deer hunting as a boy but he always said that Dad was hesitant in shooting—that he often had a clear field and an easy shot but that he always gave the deer the moment of surprise so vital to successful hunting. I couldn't understand it.

As we watched I pictured my room decorated with a large mounted buck—one with an enormous rack, antlers curving out and then in with spikes shooting off like the branches of a knotty old oak. I daydreamed off and on again, only to be awakened by the sporadic shots of other hunters, crackling in the cold air. I wondered if Grandpa's old Harrington and Richardsons would be quickly swung into action and fired at an unsuspecting buck.

My father had scouted an excellent stand. He had come a week before and seen several small herds pass by on the run. Their old droppings and tracks were everywhere around us.

At midday my father, in his endless scan of the encompassing area, stopped—adjusted his glasses—and quietly motioned me to look. There, 100 yards upwind of us, I could just make out several deer through the falling snow. Through the field glasses I could see them rooting in the snow for forage. There were four—three does and one large, magnificent buck. My heart pounded.

My father motioned me to load my gun, for they were gradually working closer to our stand. I nervously broke Grandpa's old shotgun and slipped a buckshot-loaded shell into its single smooth-bored barrel. I snapped it shut and held the gun at waist level. My father put his gun down and smiled at me, for he knew I had long

been waiting for this moment.

The herd continued grazing for a good 10 minutes. Then the buck slipped silently through to woods to the open run with the three does not far behind. At complete ease, they moved toward us on the trail. I raised my rifle slowly, for that fleeting moment of my dreams was rapidly approaching reality. We watched like stone statues. As the buck entered a cleared area 50 yards from our stand he halted and raised his head. He sniffed the air and eyed the woods, carefully his ears raised and fluffy white tail standing straight off his rump. The does suddenly turned and bounded like graceful gazelles up the trail into the woods, leaving the wary buck to face us. My father touched my gun with his hand and I ever so slowly raised it to my shoulder and sighted in on the buck's right shoulder along the long rounded barrel. He challenged us by his mere presence, standing so proudly in the snow-covered woods, but he could not see us—only sense an imbalance in the tranquil forest. I gripped the worn forearm of the gun and, holding my breath, slowly pulled on the cold metal trigger.

In those last moments, I marvelled at that wise old buck. His big black eyes seemed to stare right up the barrel of my gun at mine. His black nose was crested with a pile of snow and his cream-brown coat sprinkled with it. His thick neck set his head high and proud and not once did he move, except for the twitch of his broad, black-tipped ears. His mighty rack of antlers sat his head like a thorny crown.

He waited for what he did not know was to come and I could not help but think—as he stood—the magnificent creature that he was, that he had survived man's depredation of the land and still he thrived and wasn't that enough? The wolf had left, and the mountain lion, and the bear, but he remained—he would not leave the land that was his.

I eased up and raised the shotgun, firing a jolting shot into the grey overcast sky above, and watched the "king of the woods" bound majestically off down the trail. My father turned to me as I watched the buck vanish into the dogwoods and maples and patted my shoulder. "Good shot, son." □



LEONARD LEE RUE III

Almost Like the Early Settlers **Close to Home**

BY ANTHONY F. CAPACCIO

Opening day of the New Jersey small game season was here and I was nervous. I am a junior in high school and have been waiting for this day since the season closed last year. On this hunt I was to be accompanied by my father and two brothers. As a family we are lucky to be able to hunt small game close to home. This fact somehow connects us to the pioneers and the early settlers of a young America who could walk out of log cabins into the surrounding forests and return with food for the table.

We started our hunt on a 10-acre plot across the road from my house. The terrain we were hunting was mostly grown-up blueberry fields. Our method of hunting was simple; we would line up abreast of each other, and slowly zigzag through the field.

It didn't take long before we had some action. As my father crossed a ditch, he jumped the first cottontail of the season. The brown rocket scurried along the ground at amazing speeds, escaping two shots from my youngest brother, Ralph, and one shot from my oldest brother, Mike. We continued through the last quarter of the field jumping nothing more than a few robins. From there we walked across a road to a big hedgerow with two roads running parallel to it. Ralph and I walked through the hedgerow, while my dad and Mike walked on the roads parallel to it. We were about halfway through the hedgerow when we jumped a covey of quail. Ralph and I shot at the quail; Ralph missed, but I connected on a lucky shot, thus giving me my first quail of the season.

After we were finished in the thicket, we went on to another field. About twenty-five yards into the field we jumped a rabbit that ran between my father and me. My dad let me have the shot. I unloaded two shots from my 20 gauge pump and sent the rabbit tumbling into some briars. I retrieved my first cottontail and placed it into my game bag. I glanced at my watch: 10:30.

After we finished the blueberry field we headed for a big field that was bordered by an oak woodlot. Mike had to quit hunting so it was the three of us. We began in a field covered with briar tangles. Ralph and I walked through the field and my dad walked on a wood road parallel to it just in case any rabbits tried to escape from the side. Sure enough, as we were walking through the briars, a rabbit tried to escape out the side. It caught my dad off-guard and he only got one shot at the fleeing cottontail, a miss. We continued through the briars and were almost out, when a rabbit bolted from his nest. It ran to the woods, dodging two shots from Ralph's gun.

From the briarpatch we walked through a thick arrangement of tangle and briars; here we jumped a covey of quail and we all missed, which was not unexpected considering our reputations as quail shots. We still had an hour before lunch so we began walking homeward through the woodlot. As we walked, Ralph spotted a gray squirrel racing through the tree tops, so he tried a shot. The squirrel was about fifteen yards away when it tried to leap to another tree but never made it. Ralph connected with a great shot that sent the squirrel tumbling. Shortly afterwards, we left the woodlot but not without a surprise. We were almost out when a woodcock exploded from an alder bush. This time Ralph made up for missing the quail—the woodcock flew about twenty yards before Ralph's 12 gauge automatic boomed and the woodcock fell to the leaf-covered forest floor. Ralph placed him in his game bag along with the squirrel. Continuing homeward we saw fields that looked "rabbity" but also saw orange hats which meant somebody else thought so too. When we got home, Ralph and I skinned the morning kill, while dad cooked.

Dad couldn't make it for the afternoon hunt, so Ralph and I decided to do some squirrel hunting. At about one o'clock we headed for a mixture of oak and pine woodlot about a half mile from our house. When we got there, Ralph scouted the pines, and I the oaks. While searching the tree tops for the squirrels, I recalled the many stories written about squirrels saying that they are only active in the morning and late afternoon. But here I was at one in the afternoon spotting over fifteen squirrels! I decided to sit and wait it out. About ten minutes went by and I happened to look to my right and there was a grey squirrel about forty-five yards away sitting on a limb probably eating an acorn. I decided to try for a long shot. When the first load of low brass No. 6's hit the squirrel, he started to fall but hung in the tree fifteen feet above the ground, I shot again and went to pick up my prize. While I was walking back, I heard Ralph shoot and wondered if he had connected. I sat back down and sud-

Continued on page 30



dramatic results of The new method

PHOTOS BY AUTHOR

New Idea in New Jersey **TO DRIVE A RABBIT**

BY WILLIAM HONACHEFSKY

The sun's rays had already begun ferreting amongst the shadows of the numerous honeysuckle clumps clinging to the naked trunks. Upon the ground the crusty snow cap was littered with the debris and droppings from the winter activities of numerous animals and birds. I was posted at a favorite stand in a six-acre patch of secondary growth that had proved successful on many deer hunts through the years. Then, in the distance, the steady crunch of footsteps on the snow suddenly became audible. I moved a little to be in a better position to shoot. Suddenly a movement of brown in the thick growth of blackberry canes and honeysuckle directly ahead caught my eye. Before I could shoot, off he took. Then to my left another movement of brown. I verified my target and backstop, took aim and fired. The Marlin

over and under barked and as I recovered from the recoil, I saw that I had scored.

It was late January and the temperature was in the chilly teens. No, I hadn't killed a deer and I wasn't a poacher. My quarry had been much smaller in size than our noble Jersey whitetail. The kicking form-in the snow was a cottontail rabbit. I broke the gun and had barely reloaded when two more cottontails came hopping by far off to my right—too far for a clear shot. The crunching rhythm of footsteps was much closer now, and I broke my gun as a safety precaution. The footsteps belonged to my younger brother and I whistled as he appeared. As I did so a group of six hen pheasants burst into flight from cover immediately between us and we both jumped with a start. As they gained altitude



Brother Greg retrieving a rabbit at end of the drive. Note sumac that has been debarked by cottontails.

and roared away, we both laughed out loud. It was a beautiful day.

For years, like many of my fellow New Jersey hunters, I had hung up my gun after Christmas. The introduction in recent years of the last season for cottontail rabbit did not entice me much to leave the comfort of my fireplace—that is, until we discovered a unique way to make our hunting more profitable. My brother and I had tried the basic side-by-side technique employed in the earlier part of the small game season to pound the cover and these past forays probably contributed to our reluctance to continue, even though our trips through the January woods showed signs of unbelievably high rabbit populations. We covered a lot of ground but saw little, if any game. We failed to realize that the snow cover so prevalent in this late season made the rabbits, like deer, much more spooky. So one day, I reasoned: Why not hunt rabbits like deer, by driving? I can assure you this idea caused some raised eyebrows, but once we began using this method regularly, the results quickly overcame earlier doubts.

Here in New Jersey, the cottontail rabbit finds an environment more than suitable for his proliferation. Large agricultural acreage still abounds throughout much of the state and even in the more urbanized counties of Bergen, Union, Essex, and Hudson, one can still encounter cottontails bounding across the boulevards and scampering about lawns; however, these urban rabbits should not be confused with their rural cousins that abound in the more western counties of Hunterdon, Warren, and Sussex. Here, the competition for survival is much more vigorous and the rabbits are likewise.

In my own county of Hunterdon, a predominantly agrarian community, there are numerous large tracts of open agricultural land interspersed with small tracts of second-growth timberland. Since these are ideal living quarters for Mr. and Mrs. *Sylvilagus floridanus*, it's not unusual to see as many as 40 rabbits within a mile walk in the summertime. With the advent of the fall hunting season, the cottontail population receives tremendous hunting pressure and after several weeks, most sportsmen will swear that all the rabbits have been shot. This couldn't be further from the truth. What the heavy hunting pressure has done is to force the rabbits underground and into less accessible cover. There are also numerous tracts of land posted as game sanctuaries in New Jersey and many times the rabbits find their way there and remain for the duration of the fall and early winter season. By the end of December many of the state fish and wildlife management areas look like desolate battlegrounds and few visit these places after the first or second week of the month. When the snows come in late December and January, the cottontail magically reappears, leaving his track and other signs woven in intricate trails across the white blanket of snow.

This is the time my brother and I have looked forward to all year. Although two men can effectively utilize our driving method, we sometime hunt in a party of three or four, with four being the maximum. To get this system to work effectively, several factors must be considered. The first and probably most important is where to hunt.

Continued on page 12

TO DRIVE A RABBIT

Virtually all land in Hunterdon County is posted by private clubs; however, there are several tracts of state game lands here, as throughout much of the state, which offer excellent hunting opportunities. If access to good land is not readily available, this would be a good time to ask landowners personally for permission to hunt. Once the major part of the gunning season is over, they may be swayed to allow you to hunt since they don't have to deal with as heavy an influx of hunters as in the earlier part of the season.

The second aspect to be considered is the type of cover to look for. We must never forget that the rabbit is a living organism and must have food and water just like every other animal. In winter this search for sustenance becomes a bit more difficult and hazardous. The security of summer foliage is no longer available and trails used in the warmer weather are now much too open and dangerous. So, Mr. Cottontail moves to heavier cover. With the arrival of snow even less food is available. Now we can narrow our search to those areas which contain honeysuckle, a succulent green; sumac, whose bark provides an important source of food; and a large number of saplings. A dense understory and ground cover, such as clumps of blackberry and raspberry canes and low-growing shrubs, is probably the most significant characteristic to look for. If such areas are near apple orchards, so much the better. The cottontail seems to have a sweet tooth, if you may, for the bark of young apple trees and shoots and many times rabbit damage in an orchard will be more than enough incentive to persuade a landowner or farmer to allow you to hunt. An abandoned orchard is likewise a good place to check.

Once you have found a likely looking area and secured permission to hunt, you are ready to drive rabbits. With two, three, or four men, the amount of cover you can drive is very limited, simply because the thickness of the cover makes it imperative to keep the areas driven to manageable proportions. We try to keep the area driven at one time to under ten acres, especially when we use only one driver. Unlike deer-season drivers, the person driving need not keep up a steady staccato of shouts; rather he should occasionally whistle to enable the standers to verify his position. One rule which we employ emphatically is that the driver is never allowed to shoot no matter what he may see or how close game may be. The standers are the only ones able to judge their shots safely. Anyone who violates this rule is simply not asked on the next hunt.

As the driver begins, those on stand will immediately be treated to a view of assorted wildlife other than rabbits, but sooner or later, you will spy his hopping form approaching in the distance. Most of the time it will be at quite a slow pace, which is why I recommend this method of hunting to any bowhunter. If you shoot once and score, make sure he is dead and remain on stand, marking the spot where the rabbit has fallen. Many times I've shot my limit from the same stand in a matter of minutes.



Cottontail rabbit eating grass

LEONARD LEE RUE III

Weather conditions are extremely important on this type of hunt. The best days are those on which the sun is shining, even though the temperature may be in the teens. The wintering cottontails will be out soaking up those warming rays. If it is windy, you would be better off at home, feet propped up on the fireplace and imbibing, than out tramping the woods. Time after time, we have driven favorite cover in high winds only to come home skunked, until it finally dawned on us to stay home like our quarry was doing. The wind-chill factor means as much to the cottontail as it does to us, but I suspect the high winds prevent the rabbit from hearing warning sounds and he feels safer in the secluded confines of his winter burrow.

I would recommend shotguns no larger than 20 or .410 gauge with 7½ shot. Most often your shots will be at close ranges, so there is no need for high-power loads or large gauges. If you don't have access to one of the smaller-gauge shotguns and can't borrow one, remember to use only 7½ or number 8 shot. Many times we forsake our shotguns completely and use our bows. We have a lot more misses but a lot more fun.

Now, whenever the snows of winter lock in the land and the sun is shining brightly; get your gun, gear, some good companions, and head for the hills, for it's time to drive a rabbit. □



ILLUSTRATION BY LORRAINE DEY

Eulogy for my friends

BY BOB BYRNE

I was gonna' start this by saying that I was sitting at the kitchen table, half smashed on cheap port wine, but I'm not. It's too poetic and simply not true.

What I am, is . . . somewhat depressed. In front of me is the sorriest-looking array of beaten equipment ever assembled. It belongs to me—my hat, my boots, and my

shooting vest. They all represent countless enjoyable hours in the field. They are all beaten and tattered beyond belief.

Happily, my vest can be salvaged. A length of braided nylon line and a little tough but tender stitching will make it serviceable for another season or two. Its last words will, therefore, have to wait.

My boots, I'm sorry to say, are another story. Their time is up. Oh, they might have a few more points to approach or brush piles to kick, but their days are definitely numbered. They've become *so worn* that they're downright dangerous on the steep hillsides that I hold so dear.

Their long slide into their current deplorable condition began the day I bought them. The miles we have traveled are innumerable. The points we've witnessed and birds we've missed are within human comprehension. But, I'd rather not discuss it.

The midday meals of fresh-caught jewels that we've shared are numerous, but limited enough to muse over for awhile. And the ones that got away! The deer that have outsmarted us are fewer still, but plentiful enough to fill volumes with tales of woe.

My boots, they've served me well.

My hat, God bless it—is in an even sorer state. It has witnessed the ruination of *four pairs* of boots! The adventures it has been part of would take months to recall and years to retell. It will be missed.

I first realized my hat's sadly abused condition some years ago while engaged in a miserable, but delightful, session with trout. A torrential downpour was almost ignored because the fish were cooperating. After several hours of devoting my full attention to careful drifts and dancing fish I headed back to the car.

My companions laughed hysterically at my arrival. Not that they were overly impressed with my success, or my tales of skill (they had achieved similar results). It wasn't until I was leaning against "Mahogany Ridge" in a local establishment that I realized what my friends found so amusing—the dye had leached out of my hat and

stained my face, hair, and beard a gangrenous shade of green! Some friends!

The second hint that my hat was not long for this world came almost a year later. By this time it had acquired several small, finger-sized holes around the crease. They weren't too distressing because the hat was still functional. It retained *some* of its ability to shed rain and didn't fall off every time I ducked around a viburnum bush. An important asset for a hat!

Anyway, a group of friends and I were drifting for blues off the Jersey coast. My hat was on the deck and not on my head where it belonged, and "somehow" managed to end up in the drink. I heard a great cheer from my boatmates just as I spotted it sinking like a stone. It no longer shed water! Only after considerable effort and several deep dives did I manage to rescue it, turning the cheers to jeers.

The most recent omen of my hat's impending demise came last summer. I was visiting a small stream near my home in Sussex County to see if any smallmouths were about. After indulging myself in several hours of their spectacular leaps I noticed an abundance of ripe red raspberries growing nearby.

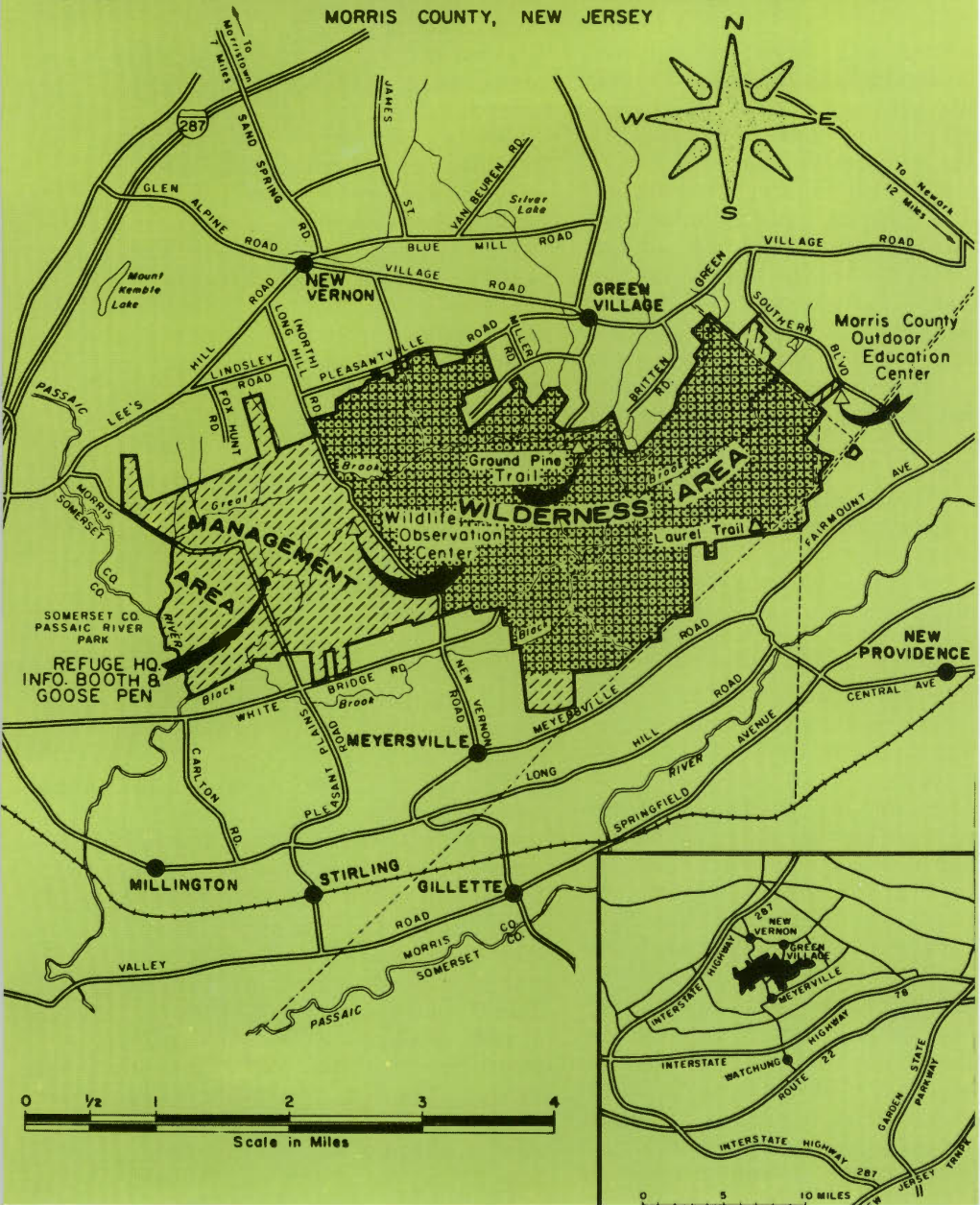
The traditional berry-pickers' measure, a hatful, soon proved elusive. The finger-sized holes in my hat had joined forces over the years to form a fist-sized gash, letting the berries scurry out the bottom as fast as I could put them in the top. The end result was that I was forced into picking twice as many berries before I could truthfully say I had a "hatfull."

I don't know what will happen to my hat, my boots, and my shooting vest. Just as I don't know how to end this eulogy to them. I've shared with you mere glimpses of the good times that we've had together. I could go on and on, but those days are past. The future is what is important.

I've recently purchased a new hat and pair of boots. Transforming them from new equipment into "old friends and companions" is only a matter of time. Time spent huntin' . . . Time spent fishin' . . . Time spent a wanderin'. I'll make THAT kind of time. □

GREAT SWAMP NATIONAL WILDLIFE REFUGE

MORRIS COUNTY, NEW JERSEY



active conservation education in a wildlife refuge

BY STEPHEN J. ZIPKO
*Biology Teacher
Randolph Intermediate School
Randolph, New Jersey 07801*

▽ Nesting data on wood ducks have been gathered from single-compartment boxes.



"Hey, look at this! One . . . two . . . three . . . four . . . twelve hatched young! Quick, start taking out the bad eggs while I check their temperatures!"

Such is the excitement typical of active outdoor instruction—the kind that's so different from the passive type in which teachers and other youth leaders merely lead pupils through a maze of boardwalks.

My experience has shown that students of all ages from grade 4 through college get next to no lasting benefits from passive outdoor education. Unless, of course, they are already highly motivated to outdoor topics. But even this isn't enough. If we really want to generate and maintain a conservation ethic in young people, it does us and them no good to passively visit a natural (not artificial) ecological system one day out of an entire school year, then let them see how New Jerseyans systematically eliminate 46 square miles of habitat during the rest of the year. What they *do* learn from this is yet another example of adult hypocrisy at its worst.

Any type of education system must be repetitive to work. This includes conservation education. Our active outdoor instruction program at the Randolph Intermediate School meets this need because pupils can help initiate, develop, design, or implement wildlife management projects at the Great Swamp Wildlife Refuge.



Youngsters tabulate data obtained from woodland field-studies.

PHOTOS BY AUTHOR

Our field "trips" are frequent but are not trips in the usual sense. They are field studies which may involve all the habitats the Refuge offers—from meadowland to woodland to marsh and swamp. They are interdisciplinary because the information learned is applicable to physics, biology, art, geology, hydrology, geography, chemistry, music, industrial arts, social studies, math, foreign languages, English, political science, law, and so on. Most important, they require students to work both mentally and physically. Only then can they truly learn what conservation is all about.

I have worked with youngsters on myriad minicourse projects involving a combination of outdoor and indoor activities. Allow me to present a sampling of them.

Woodland and Water Compared

This exercise is flexible and can be taught in one week or four depending on schedule, teacher availability, age of pupil, material covered, etc. I have taught it during an entire autumn from October through December to four seventh-grade groups. In this way I'm able to introduce the element of seasonal change into the course.

Continued on page 22

Meadowland and old, abandoned farm lots are loaded with small mammals, insects, and nesting birds which students can study.



Continued from page 6

crows

and were flying past at about 100 yards to our right. I gave two frantic comeback calls and they veered back toward us. I crouched lower and added a distress call just for good measure. The crows cleared some nearby trees and suddenly were in range. I rose and fired, but off they flew with not a ruffled feather. Scott always was the better wingshot.

A brief lull followed that gave Scott a chance to retrieve his crow. It was a medium-size, healthy specimen — that is, until his date with us.

We returned to our blinds when we heard another crow off in the distance. His calls were soon joined by others and we realized that a large flock — maybe 60 to 75 crows — was headed our way. They were making an awful lot of noise for a traveling flock and we soon discovered the cause of all the uproar. It was that live owl! It did distract the crows away from us, as Scott had feared. So the largest flock of the morning flew by out of sight, but just in hearing distance. I almost gave myself a heart attack trying to call those crows over. Only a curious scout came close.

What followed, though, was a much more than slightly successful morning of trying to fool clever crows. They came mostly in doubles and singles, with about half a dozen triples. During the next hour and a half, I scored on a total of four of the wily devils, while Scott collected five more.

I experimented when calling the crows, trying to find the right combination that would cause them to lose all caution and come in low, thinking that they were coming to

the aid of a fellow crow. Short, rapid caws only scared them off, as this is the “Danger” call. Long caws, as long as my breath could make them, lured the crows in, but they came in cautiously, as if searching the ground for their distressed friend. Usually they would spot one of us crouched in the bushes and fly off giving the “danger” signal. A medium-length caw, (for me, three per breath) seemed to be a “Hey, good morning” call. When I used this, the crows would answer me back in the same call, as if to say “Good morning to you.” Eventually, I worked out a successful series of calls. First, when the crows were spotted flying or just heard within calling distance, I gave a couple of fairly long distress calls to get their attention. Then, when they saw the decoys and were headed toward them, I just shut up and let them come to the decoys out of curiosity. Usually they would watch the fake owl and crows for signs of a fight. After coming quite close they would either come right in, convinced, so that no more calling would be required, or they would turn to leave, unconvinced that it was worth staying. If this happened, I would give the secret comeback call. This consists of two very short, quick notes followed by two longer notes. The longer caw is about as long as the two first caws put together. Nine times out of ten this would turn the crows abruptly around to fly directly over us and our waiting guns. The comeback call can also be used to call back survivors after a shooting flurry. Occasionally a shot-at crow will return to the decoys, but only if he wasn’t stung by a pellet, or overly scared, or if he didn’t spot you as you shot.

Hunting crows can be more of a challenge than most people think. Crows become extremely wary even when hunted only once a weekend. They seem to remember where the blind was located the week before and avoid that area. The best way to hunt crows is to catch their morning and evening flights to and from the roost where they spend each night. Scout prospective blind sites in early morning and late afternoon. Note landmarks that the crows fly over and set up your blinds accordingly (with the landowner’s permission, of course). Make sure your blinds aren’t too close to the roost or the crows will leave when you come in.

Weather is very important. Crows will usually fly into the wind on one of their daily trips; this is the best time to hunt them, as the headwind forces them to fly closer to the ground, and slower. Crows flying with the wind merely gain altitude (usually lots of it) and coast along the wind almost effortlessly. It is next to impossible to pull crows down to your setup in this situation. When there is absolutely no wind it is almost as bad, for crows will then fly very high. There was no wind on the morning of our hunt; however, it was an example of how crow hunting can be better in the morning than in the afternoon. In the morning the crows are looking for food and are therefore flying lower than they would with a full stomach in the afternoon.

So, for a real challenge get out before the end of February and try to match wits with the canny crow; if you don’t want to brave the cold, wait until the late summer season, which usually begins in early August in New Jersey. □

LEONARD LEE RUE III

crow roost





Environmental News



WITH A STROKE OF THE PEN. . . Commissioner Ricci signed an administrative order on September 7 creating the Passaic River Citizen Task Force as an official advisory group to DEP for flood management in the Passaic River Basin. Ricci appointed Deputy Commissioner Betty Wilson to be chairperson of the 30-member group. Ricci praised the accomplishments of the task force which was founded a year earlier as a volunteer group noting that they had already had "very real success toward formulation of a plan." (The task force pushed for congressional appropriation of \$12 million to start a Passaic River flood control project. Congress approved the project and \$1 has been appropriated. The Army Corps of Engineers is working with the task force to develop flood control proposals which will include structural and nonstructural changes in the basin area.) Ricci said, "This type of task force, composed of representatives of varied interests, is unique to government . . . Without this type of involvement, I don't think we would ever arrive at a real solution. The varied interests involved must be able to sit down like this in order to work out complex problems of this sort." Flanking DEP Commissioner Ricci in the photo above are State Senator Anthony Scardino of Lyndhurst, where the signing took place, and Deputy Commissioner Betty Wilson. Standing from left to right are Eileen M. Becker, area representative from Lyndhurst; Darryl Caputo, assistant director, N.J. Conservation Foundation; Candace Ashmun, executive director, N.J. Association of Environmental Commissioners; and John Maddocks, representing New Jersey S.E.E.D. (Society for Environmental Economic Development). The task force is divided into two subcommittees: State Strategy, headed by Caputo; and Planning Liaison, chaired by Wilson.

COURT UPHOLDS PARKLAND TAX EXEMPTION LAW

In the past three years nonprofit corporations and organizations have dedicated more than 11,000 acres of open space land to use by the public for recreational or conservation purposes under terms of the Green Acres Tax Exemption Program. The Commissioner of Environmental Protection must certify that such lands are eligible for local property tax

exemption.

The law, N.J.S.A. 54:4-3.63 et seq., was tested in a state court of appeals this past summer when four Morris County municipalities and one in Essex County challenged the DEP commissioner's power to grant tax exemptions. The plaintiffs also contended that a trial-type hearing should be held

Continued on page 16D

Often used to light school gyms

DEP Urges Frequent Checks of Mercury Vapor Lamps

With the 1977-78 sports season underway, school gyms throughout New Jersey are being used by thousands of players and spectators in the late afternoon and evening hours. Many of the gymnasiums are lit with mercury vapor lamps which have high efficiency and long life as compared with incandescent and fluorescent lights. (There are more than 25 million mercury vapor lamps in use nationwide—mostly in school gyms, sports arenas, commercial stores and industrial facilities.) As long as the outer envelope of such lamps is undamaged, there is no ultraviolet radiation safety problem.

There have been scattered incidents of ultraviolet (UV) radiation exposure in schools around the country in the past few years, including one in New Jersey in February 1977, and all have been traced to a broken mercury vapor lamp in a school gymnasium. DEP's Bureau of Radiation Protection urges schools and other buildings which have existing installations of mercury vapor lamps—particularly in areas where they may be vulnerable to damage—to set up a regular schedule to check the lamps for breakage. If the outer bulb of a mercury or multi-vapor lamp is broken and the arc tube is operating, TURN LAMP OFF to prevent exposure to ultraviolet energy.

In the New Jersey incident, a damaged lamp was found to be the cause of a few cases of short duration skin and eye problems among some of the people who attended a sports event in a school gym. Those affected sat under a broken mercury vapor lamp during the event. (The most common short term effect on human skin is erythema—reddening—and the most frequent short duration eye problem is photokeratitis—inflammation of the eye.)

The bureau recommends that the following precautions be taken:

- All mercury vapor replacement lamps should be of the fail-safe type which automatically shut off when damaged.
- The unused inventory of lamps should be either returned to the vendor or used in areas where people do not congregate (e.g. parking lots, street lighting).

Continued on page 16D

Wells contaminated

DEP Takes Two Chemical Companies to Court on Water Pollution Charges

The department went to court against operators of two chemical plants in Oldbridge Township in August charging them with polluting the underground water aquifer which feeds the Perth Amboy well field. Named in the complaint filed in Middlesex County were Madison Industries, Inc., and Chemical & Pollution Sciences, Inc. (CPS) both located on Old Waterworks Road.

According to the complaint, CPS has impeded the DEP investigation of the pollution emanating from its property by refusing access to take groundwater samples. Madison Industries is charged with discharging heavy metals into the sewer system in excess of allowable limits. The eight-count complaint alleged that both companies, contrary to law, are discharging hazardous substances such as lead, zinc, cadmium, petroleum products and other organic chemicals into the ground and surface waters, posing a serious health hazard.

DEP alleged that both plants have been discharging into Prickett's Brook and the Old Bridge aquifer which serves the Perth Amboy well field. As a result, numerous potable (drinking) water wells have been condemned as unfit for human consumption by DEP and taken out of service.

(The purpose of the court action is to protect the many other wells which are not contaminated. The well field, operated by the city since 1900, yields about 7 million gallons daily.)

Judge David D. Furman ordered CPS to show cause why it should not be required to install three groundwater monitoring wells under DEP direction and Madison Industries to show cause why it should not be ordered to comply with state law concerning pretreatment of its wastes discharged into the sewer collection system.

The suit also asks for penalties of \$25,000 a day for each violation of the Spill Compensation and Control Act and the Water Pollution Control Act as well as penalties of up to \$6,000 per day of violation under other water pollution control statutes. DEP asked the court to order both firms to institute cleanup plans removing all hazardous substances from the surface and groundwaters and to direct the firms to take all necessary measures to prevent such discharges in the future.

CPS has since agreed to comply with a court order to install the groundwater monitoring wells under DEP direction; and Madison Industries has been set down for a hearing this fall.

Deputy Attorneys General Keith A. Onsdorff and Stuart R. Meislik presented the case for DEP. □



ENVIRONMENTAL BRIEFING. New Jersey has been selected as one of only 10 states to participate in a federally funded program to employ older Americans in part-time jobs relating to the prevention, abatement and control of environmental pollution. Above is part of a group of 21 New Jerseyans who are working for DEP under this national Senior Environmental Employment (SEE) program (identifications given at end of story). The group's first project will be to carry out the follow-up study to a survey on hazardous waste products generated by selected New Jersey industries. The SEE participants will also conduct a similar follow-up operation for a statewide survey of selected carcinogens (cancer-causing substances). The SEE program, scheduled to run for three years and provide at least 200 jobs

nationally for older persons each year, is sponsored jointly by the U.S. Environmental Protection Agency and the federal Agency on Aging. Each of the 10 states will receive \$100,000 each year (90 percent of the cost) to fund the program. New Jersey "seniors" interested in becoming part of the SEE program should contact the Office on Aging in their particular counties. In the photo above, seated in the front row, left to right are Albert Hughes of Union County, Bernard Kaplan (Hudson), Anthony Petrilli (Camden), Ward Freeman (Essex), Monroe Kestler (Essex); Standing, Harvey Duhmel (Burlington); second row, left to right are Joseph Petrakian (Hudson), Lucy Hartig (Mercer), Lucie Merisier (Essex) and Ruth Faust (Burlington).

Morristown (Morris County)

SEWAGE PLANT ORDERED TO CLEAN UP ITS WASTES

The department ordered Morristown to repair sludge treatment facilities at its sewage treatment plant which has been discharging inadequately treated wastes into the Whippany River, causing serious odor problems in the surrounding area. The order, issued on September 20, required an immediate halt to the discharge of improperly treated sludge within 15 days and repair of the plant's sludge digesters within 30 days.

Jeff Zelikson, acting director of DEP's Division of Water Resources, said the order was issued after DEP inspections revealed that Morristown had failed to comply with previous orders requiring the cleaning and repair of sludge digesters. (The Morristown plant, located off East Hanover Avenue, provides secondary treatment for an average two million gallons of sewage daily prior to discharge into the Whippany River.) □

STATE WINS TIDELANDS CASE

The department won an important tidelands case recently when Superior Court Judge James J. Petrella in Bergen County ruled that the state has legal ownership to a watercourse in the Hackensack Meadowlands because it was formerly flowed by the mean high tide. The decision was significant because it sustained techniques by which the state defined its claim to lands that were formerly flowed by the tide, but were filled in without authorization years ago.

The land parcel involved contains 108 acres, a portion of which the state claimed as the former bed of Fish Creek in East Rutherford, located between Berry's Creek and Berry's Creek Canal in the vicinity of the Sports Complex. The former creek bed is slightly more than three acres.

Under New Jersey law, any land that is now or was previously flowed by an average of the high tides (below mean high water line) belongs to the state. The difficult task of proving that the watercourse existed and was formerly tidelands involved analysis of historical maps and aerial photographs. □



MORVEN IN AUTUMN. A carpet of multi-colored autumn leaves provides a beautiful setting for Morven, the governor's mansion, located in Princeton (Mercer County). When the 200th anniversary celebration of the American Revolution began, Morven was already 225 years old. Built circa 1750, the house was occupied by the prominent Stockton family for generations. Richard Stockton, the builder, was a signer of the Declaration of Independence. His wife, Annis Boudinot Stockton, named it "Morven." Walter E. Edge, the late former governor, purchased the property in 1945 and deeded it to the state in 1954 for a year-round governor's residence. Robert B. Meyner was the first chief executive to live in the mansion now the home of Governor Brendan Byrne. The view of Morven in the photo above shows the "dentil" architectural design under the eaves of the central portion of the building's north wing. This historic site is administered by DEP.

NEW JERSEY IS FIRST STATE TO RECEIVE AUDUBON GRANT

The New Jersey Endangered and Non-game Species Project, administered by DEP's Division of Fish, Game and Shellfisheries, recently received a grant of \$1,500 from the National Audubon Society for expanded research on endangered and threatened reptiles and amphibians in the state. The grant will be used to match federal aid to endangered wildlife species monies which will result in a \$4,500 project to study the status of the bog turtle, timber rattlesnake, pine snake and corn snake, as well as nonthreatened wildlife species.

The approval letter from the society's grant research committee said, "New Jersey's Division of Fish, Game and Shellfisheries is the first state agency of its kind to receive a grant of this nature, and we hope other states will show an interest in the nongame and endangered species resources as has New Jersey." □

COMMUNITY NOISE CONTROL

Copies of DEP's "Example Community Noise Control Ordinance" have been mailed to all municipalities and environmental commissions. The model ordinance, designed to help local governments control this pollutant, received public hearing. Workshops for municipal officials were being planned as NJO went to press. For further information contact Ed Di Polvere, supervisor, DEP, Noise Control Office, 380 Scotch Road, Trenton 08625. □

Auto emissions control

DEP TRAINING PROGRAM FOR AUTO MECHANICS

A training program in auto emissions control technology for individuals working as garage mechanics in New Jersey is slated for early 1978. Mechanics who successfully complete the course will receive certificates. A grant received from the federal Environmental Protection Agency (EPA) for \$36,400 will help fund the program.

Paul Arbesman, director of DEP's Division of Environmental Quality, noted that the 1978 training program will be the second given by DEP jointly with the state department of Education's Division of Vocational Education. The first group to be trained and certified were vocational-technical teachers currently employed in New Jersey.

"Automobile pollution is a major contributor to the state's air pollution," Arbesman said. "We feel that the training program in auto emissions control will be a significant factor in solving the overall automobile pollution in New Jersey." Cleaner running cars mean less air pollution and fewer gallons of gas used.

The training program will be offered in several locations around the state. For information about participating in the program, contact John Elston, supervisor, Air Pollution Control, Motor Vehicles Section, at 609-292-6714. □

SPOTLIGHT ON GEOLOGY

Just off the presses are three new booklets in the popular educational series describing the geology of various sections of New Jersey. As usual, the publications — "Geology of Mercer County in Brief," "Geology of Burlington County in Brief," and "Geology of Monmouth County in Brief" — were authored by geologists in DEP's bureau of Geology and Topography.

The booklets are 8½" x 11" in size and average 16 pages packed with information including geologic history and time scale involved in the formations, and the history of mineral production in the particular county spotlighted. The texts are complemented with appropriate maps, drawings and diagrams.

There are now ten "county in brief" booklets. In addition to the three mentioned above, the series includes Bergen, Essex & Union, Hunterdon, Morris, Passaic, Sussex and Warren. Copies of each are available at \$1 per copy, except for the Morris County booklet, which is much longer and sells for \$1.50. (The Morris County booklet includes a history and diagrams of the formation and demise of Glacial Lake Passaic. The Great Swamp and Troy Meadows are the bottom deposits of this extinct glacial lake.) Any or all may be ordered from DEP, Bureau of Geology and Topography, Publication Sales, Box 1889, Trenton 08625. Please make checks payable to "General Treasury, State of New Jersey." □

ENVIRONMENTALISTS MEET IN PRINCETON

"Between Man and Land: Emerging Solutions" was the theme of the fourth annual Environmental Congress convened in Princeton on October 22. The all day meeting, which drew hundreds of attendees from around the state, featured discussions of environmental issues and policies, the then gubernatorial candidates Brendan Byrne and Raymond Bateman and luncheon addresses by Environmental Protection Commissioner Rocco D. Ricci and federal Environmental Protection Agency Region II Administrator Eckardt Beck.

Seventeen concurrent seminar sessions on subjects were held. These included energy alternatives, solid waste disposal, noise control, Pinelands preservation, farmland preservation, waste water disposal, urban neighborhood recreation, coastal zone protection, nonpoint pollution, endangered species and land use planning and a special symposium for legislators and their staffs on Legislation for Environmental Protection.

Representatives from industry, business, government, labor, conservation environmental, agricultural and health groups and other professionals in related fields as well as members of the press attended the congress which was sponsored by 16 environmental organizations including the Association of New Jersey Environmental Commissions and DEP. □



ONE BUSING PROGRAM EVERYONE LIKED!

"Where're we goin' today?" Close to 200,000 youngsters in New Jersey received delightful answers to that question during the summer of 1977 as participants in the state Youth Recreation Opportunity Project administered by DEP with funds appropriated by the Legislature. Between July 11 and September 2, youngsters up to the age of 18 from lower to moderate income families were taken on bus trips to attend baseball games, visit zoos, museums and the United Nations; and for excursions to New Jersey's state parks and forests for "sun 'n fun" days (no park admittance fee was charged to such groups). In addition to the busing program, the program this year for the first time provided resident and day camp camperships for approximately 2,500 youngsters at state approved camps. Ms. Nancy Borro, of DEP's Parks and Forestry division, coordinated the program. She said that 58 youth-serving nonprofit agencies in 15 counties participated in the recreational and cultural program. □

Cape May County

DEP ISSUES CAFRA PERMIT FOR SEWERAGE FACILITIES

The department recently issued a Coastal Area Facility Review Act (CAFRA) permit to construct new sewerage facilities to serve Cape May City, West Cape May, Cape May Point, and a portion of Lower Township south of the Cape May Canal. The new sewerage facilities will replace an inadequate and antiquated sewerage system that is polluting the Delaware Bay, a situation which has prevented DEP from permitting additional sewer connections in the area.

The proposed facilities would include construction of a 2.75 million-gallon per day wastewater treatment plant for the City of Cape May, three new pumping stations to replace existing ones, and 20,000 feet of new interceptor lines. □

OVER 200 YOUTHS IN 1977 YCC PROGRAM

More than 200 high school age young people participated in the Youth Conservation Corps work/study/recreation program this past summer. The federal/state program, administered in New Jersey by DEP, employed 100 youths at three resident camps and 114 youths at 12 nonresident camps. The young people participated in environmental projects involving construction, stream clearing, erosion control and site clearing; learned about nature and enjoyed recreational outings. The success of this program can be measured by the fact that in 1975, the YCC had places for 40 youths—but by 1977, the program had been expanded to accommodate more than 200 young people. □

PESTICIDE APPLICATORS MUST BE CERTIFIED

As of October 1, 1977 all pesticide applicators (private and commercial) in New Jersey must be certified and registered with DEP's Office of Pesticide Control to fulfill the requirements of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and the New Jersey Pesticide Control Regulations.

To become certified and registered, pesticide applicators must take various examinations offered by the Office of Pesticide Control. For information concerning study materials, times, locations and registrations for these examinations, contact the office at 609-292-5890 or write to the Office of Pesticide Control, 380 Scotch Road, Trenton 08628. □

GREEN ACRES FUNDING UPDATE

A bill signed into law by Governor Byrne this past August provides \$30 million for grants to local governments under terms of the 1974 Green Acres Program. *The law also includes provisions for local governments to accept donations of land and to use the gift value to offset all or part of the local share of an acquisition project.* Grants to county and municipal governments are administered by DEP for the acquisition and development of open space, park, recreation and conservation areas. The state grants are for 50 percent of the total cost of the project with the local government contributing the balance. For further information contact DEP, Green Acres Program, Box 1390, Trenton 08625. □

LIBERTY STATE PARK PROGRESS

Construction contracts totaling over \$3 million have been awarded for improvements to the existing 35-acre Liberty State Park and to the historic Central of New Jersey railroad station and ferry complex at the northern end of the 800-acre tract. The jobs include rehabilitation of bulkheads and construction of a boat-launch ramp on the south edge of Black Tom Cove; providing playground equipment, sun shades over picnic areas and additional parking spaces for 174 cars and boat trailers; lighting the parking areas; restoration of the historic train concourse and station house, and rehabilitation of the storm drainage system. □

Off-season bonus

FREE PARKING AT TWENTY STATE PARKS IN EFFECT

Parking fees have been discontinued at 20 state parks/forests and reduced to \$2 daily at Island Beach State Park through April 1978. This is an annual program.

Free parking for the quiet season is in effect at the following 20 areas: Allaire, Barnegat Lighthouse, Bass River, Batsto, Belleplain, Cheesequake, Hacklebarney, High Point, Hopatcong, Lebanon, Parvin, Ringwood, Skylands, Shepherd Lake (in Ringwood), Round Valley, Spruce Run, Stokes (Stony Lake), Swarstwood, Washington Crossing, and Wawayanda. □

Continued from page 16A

PARKLAND TAX EXEMPTION LAW

rather than a simple public hearing before making determinations for or against certifying tax exempt status.

A three-judge panel rejected both contentions. Judges John F. Lynch, Leon S. Milmed and Melvin P. Antell, in a decision rendered June 29, ruled that the law was constitutional—thereby upholding the law and the DEP commissioner's power to grant tax exemptions. The court said that the law specifically permitted the tax exempt status only for land owned by a nonprofit corporation or organization and dedicated exclusively to recreational and conservation purposes. It noted that DEP had supplied municipal officials and residents sufficient notice of a public hearing by advertising the time, date, and place of the session in a local newspaper. The decision said the law "embodied a clear legislative intent to encourage dedication of undeveloped land for public use at a time when the supply of such property was rapidly diminishing." Deputy Attorney General John M. Van Dalen represented DEP in the case.

Current status of program

DEP Commissioner Ricci in September certified applications from nonprofit organizations (e.g. N.J. Conservation Foundation, N.J. Audubon Society) involving close to 440 acres of land located in seven municipalities as eligible for local property tax exemptions totaling more than \$40,000. These exemptions begin January 1, 1978. The lands become available to the public at that time. Added to the 10,600 acres previously approved, the total amount of land opened to the public under this program will exceed 11,000 acres.

This program, along with the Green Acres land acquisition programs, is helping to decrease the statewide deficit of 460,000 acres of public recreational lands as described in the recently prepared "1977 Statewide Comprehensive Outdoor Recreation Plan."

Interested groups should write to DEP Green Acres Tax Exemption Program, Box 1390, Trenton 08625. □

Continued from page 16A

MERCURY VAPOR LAMPS

- Maintenance personnel, teachers, aides, and administrative personnel at schools where mercury vapor lamps are used should be made aware of the potential exposure problem and be on the alert for signs of lamp damage, such as broken glass on the floor.
- The lamps should be inspected on a monthly basis to assure they are not broken. Inspections should NOT be made when the lamp is lighted because the high light intensity emitted may be hazardous if viewed directly at close range.
- If a lamp is broken, its use should be discontinued immediately, and the lighting system should not be put back into use until all the lamps have been thoroughly inspected. □

Select and Cut Your Christmas Tree This Year

by
RONALD J. SHEAY,
Secretary
Christmas Tree Growers Association
 and
FRED E. JOHNSTON, JR.
Director of
Information and Public Relations
Christmas Tree Growers Association

"There's a nice one over here!" "Boy, there's a beauty and look at that color!" "No, I've found a better one!" These words will be echoed time after time at some 200 New Jersey Christmas tree growers' farms during the Holiday Season. Each year more and more families are enjoying an outing in the country as they choose and cut their natural Christmas tree.

Those people that make the buying of a Christmas tree a family outing enjoy a number of advantages. This usually requires a short drive through the country on a crisp late fall or early winter day in search of that perfect Christmas tree. They will be assured of a fresh natural tree that will stand and look in their home as it does in the field.

Prices of trees will vary from farm to farm and also will depend on the species selected. The following is a brief description of the most popular species found on New Jersey Christmas tree farms:

SPRUCE

Colorado Blue Spruce—Needles are about one inch long, four-sided, green to silvery blue, stout, rigid and short pointed. Good needle retention.



Selecting the tree

RUTGERS UNIVERSITY



Let's take it home

RUTGERS UNIVERSITY

Norway Spruce—Needles $\frac{1}{2}$ to $\frac{3}{4}$ inch long, dark green, branches are spreading and somewhat pendulous. Needle retention moderate.

White Spruce—Short $\frac{1}{2}$ to $\frac{3}{4}$ inch green needles with silvery tinge. Moderate needle retention. Early cone producers—may have cones on a six foot tree.

PINE

Scotch Pine—In young trees branches are regularly whorled. Needles occur in clusters of two and

are usually twisted $1\frac{1}{2}$ to 3 inches long bluish or grayish green. Excellent needle retention.

White Pine—Needles occur in clusters of five and are soft, slender, green to bluish green, 2 to 5 inches long. Flexible branches with excellent needle retention.

FIR

Douglas Fir—Needles are flat, short $\frac{3}{4}$ to $1\frac{1}{4}$ inches and dark green to blue green in color, graceful branching, excellent needle retention.

Continued on page 27



Bud Giannetto in his workshop.

more than a hobby

by John C. Wells

When he was just a kid, 12 or 13, Vincent (Bud) Giannetto used to turn peach stones into monkeys, carefully whittled by just a penknife and youthful enthusiasm. Now he is a noted waterfowl carver, his work known throughout the nation, especially in East Coast circles.

He has been a hunter since boyhood and although he hunted everything from quail, pheasant, and bunnies to deer, ducks are his first choice. Bud's first decoy was a Christmas present paper-mache mallard—he remembers it as a poor imitation that fooled very few birds. Determined to improve his duck hunting, he made some crude stools. And that is how it began—with a teenager's desire for better shooting.

But utilitarian purpose soon turned into a hobby. Bud explains that a fellow worker learned of his interest and loaned him an old Fitzpatrick decoy, a turn-of-the-century bird made by the famous Delanco, New Jersey, craftsman. This collector's item served as his early model for what has now become rather sophisticated hunting blocks still made for personal use.

Giannetto's skill drew attention among local hunters and carvers, one of whom finally talked him into attending a show. It was the 1967 U.S. National Decoy Show held in Babylon, New York. As Buddy explains his reaction: "While I was impressed by the entries, especially the variety and number on display, I came away convinced that I could compete or at least try." This was a turning point.

The next year's Babylon show had two Giannetto entries, a drake greenwing teal and a hen bufflehead. The teal took a blue ribbon and the bufflehead a red one. These first and second placements proved a real stimulant, for the following year found Giannetto birds entered in shows from Maine to Mississippi, Michigan to Long Island, collecting some ten ribbons. And most of these decoys were in the professional, not amateur, class.

Bud quickly became known in the decoy world as a promising young carver to be reckoned with. He entered more shows and continued his winning ways. Perhaps his stiffest competition was in 1972 and 1973 Ward Foundation World Championship waterfowl carving

competition in Salisbury, Maryland. He entered a brant the first year and won a third placement; the next year his three birds took another third place and two honorable mentions.

As Bud increasingly found his way into the winner's circle, and as his work became known and respected, Giannetto decoys came to be sought by collectors and hunters. He made and sold dozens of decoys, everything from geese to teal, both stools for the discriminating hunter who wished to shoot over hand-carved blocks and pass them on to his sons, to fancy show birds purchased to adorn a connoisseur's den.

Bud continued in competition, but increased orders from customers allowed less time for the countless hours necessary to create competitive-caliber birds. During this same period he started his own masonry and construction business, turning his carver's skill and eye for detail to designing and building stone and brick fireplaces.

While these activities have cut into Bud's carving time, he still participates actively in contests and shows. For example, he won second-place honors with a brant at the Greater Snow Goose Decoy Contest in Chincoteague, Virginia, last spring. He has also exhibited his birds at the Smithville Inn in Smithville, New Jersey and at the Echelon Mall in Voorhees Township, New Jersey, in recent months.

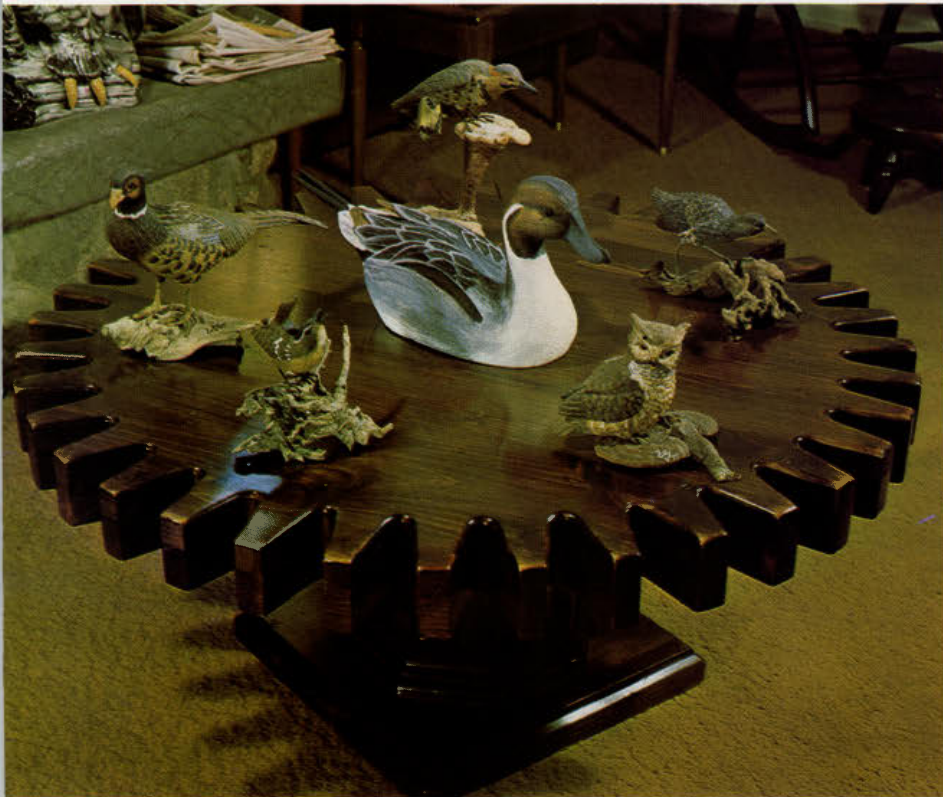
A broadening clientele has encouraged Bud to at-

tempt a greater range of carving. As Bud tells it: "At first it was just hunters and collectors who came by. But now I'm selling to as many members of the Audubon Society as to Ducks Unlimited." This means that on any given day his workbench may hold as many woodcock, grouse, owls, songbirds, and shorebirds, as geese and ducks.

Bud Giannetto's decoys and carvings are known for their exactness of detail, natural positions, and precise painting. A visit and conversation with him at his home in Beverly explains why. He is a lifelong conservationist. He has spent literally thousands of hours in the field watching wildlife as well as hunting. He has gunned waterfowl on majestic Hudson Bay, on the historic Chesapeake and Barnegat bays, on the Delaware River, and on too many streams and marshes to remember. He makes an annual pilgrimage to Cape May to intercept migrating woodcock, pushes Wading River meadows for railbirds, and wanders the woods and fields of his native Burlington County for upland game. Additionally, his freezer holds specimens that he uses as models, and his backyard boasts some two dozen ducks and several geese that are likewise employed.

Perhaps most significant is why he carves. When I posed this question, he answered simply, "Because I love it." But continued questioning reveals that this love is born from love of the outdoors, from respect and affection for game, and from recognition that nature's beauty is something worthy of preservation. □

PHOTOS BY PATRICK BOFFO

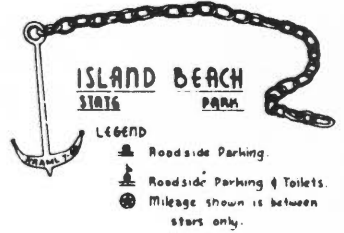
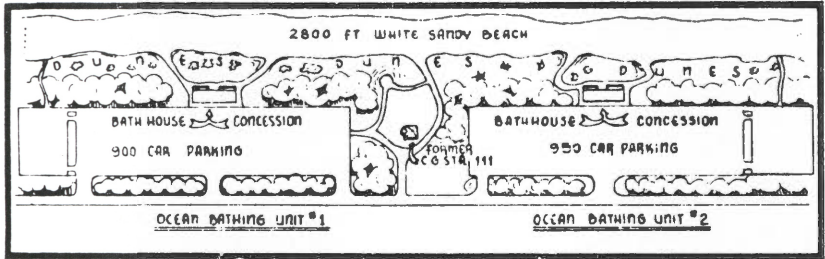
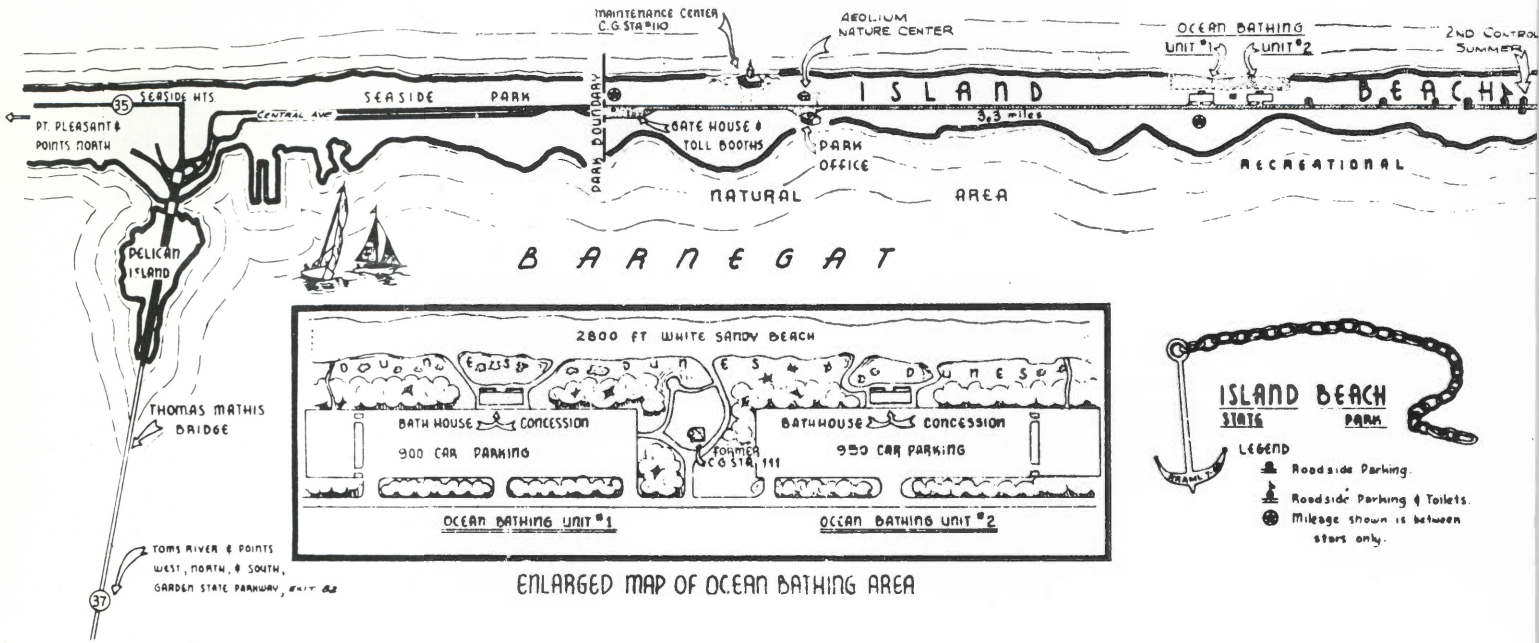


Reading clockwise from 12 o'clock, a flicker, sora rail, screech owl, marsh wren, pheasant and, in the center, a pintail.



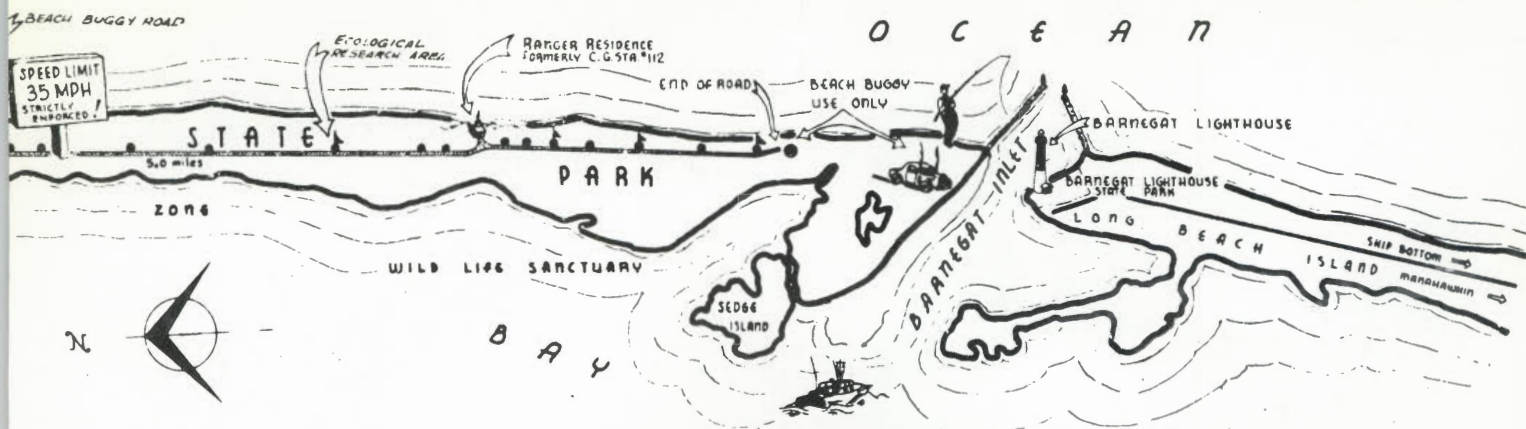
Canada geese

A T L A N T I C



ENLARGED MAP OF OCEAN BATHING AREA





A BUS GOES TO ISLAND BEACH

Compiled by □ Helga Busemann □ Alex Corson □ John Weingart

This past summer, the Department of Environmental Protection conducted an experiment to see if people would use public transportation, if it was convenient and efficient, to go to a park. DEP ran a shuttle bus service to Island Beach State Park from a parking lot near the Garden State Parkway in Toms River. The project was such a success that it is now under study as an example for other sites in New Jersey and elsewhere in the nation.

Island Beach State Park is the magnificent 10 mile unspoiled beach and natural area owned by the State of New Jersey and administered by DEP's Division of Parks and Forestry. Thousands of people visit the Park each year, and many consider it one of the finest beaches in the country, but there is a problem—parking. As the Park's popularity has grown, the 1800 available parking spaces have been filled on increasing numbers of sunny summer weekends. When the parking lots were full, there was no choice but to turn away the disappointed latecomers, even though there was still plenty of room on the beach.

One possible approach to this situation would have been to expand the existing parking areas. This, however, would have destroyed some of the vegetation which makes Island Beach so special. Also, a new state law prohibits building new parking lots in the Park. Instead, the Beach Shuttle used a vacant area near Exit 81 of the Garden State Parkway as a parking lot. Each weekend day, several buses made the 25-mile round trip as often as they were needed. Waiting time was almost always less than 30 minutes, the Shuttle's parking lot was never full, and the buses had space for chairs, strollers, and other beach paraphernalia.

On peak weekends, more than 1000 passengers parked and rode the Shuttle to the beach. Throughout the summer, more than 8000 people used the Shuttle.

The charge for parking, the round-trip bus ride and beach admission was 50¢ per person, compared to the \$5.00 per car charged for entering the Park on weekends. The actual cost of providing the Shuttle service was approximately \$2.25. The 50¢ charge was made possible by an innovative research grant given to DEP by the National Oceanic and Atmospheric Administration (NOAA).

The idea for the Beach Shuttle began in June, 1976 when then DEP Commissioner David J. Bardin and DEP's Director of Marine Services Donald T. Graham led a 126 mile fact-

finding walk along New Jersey's oceanfront. The citizens greeting the beach walkers spoke of many concerns. One recurring theme, however, was the difficulty of visiting New Jersey beaches because of insufficient parking and other facilities. Graham, testifying a month later at a public hearing of the Legislative Beach Access Study Commission, suggested a bus shuttle as one possible approach. The Office of Coastal Zone Management in the Division of Marine Services then began exploring the feasibility of the concept, and ultimately secured the necessary financial support from NOAA.

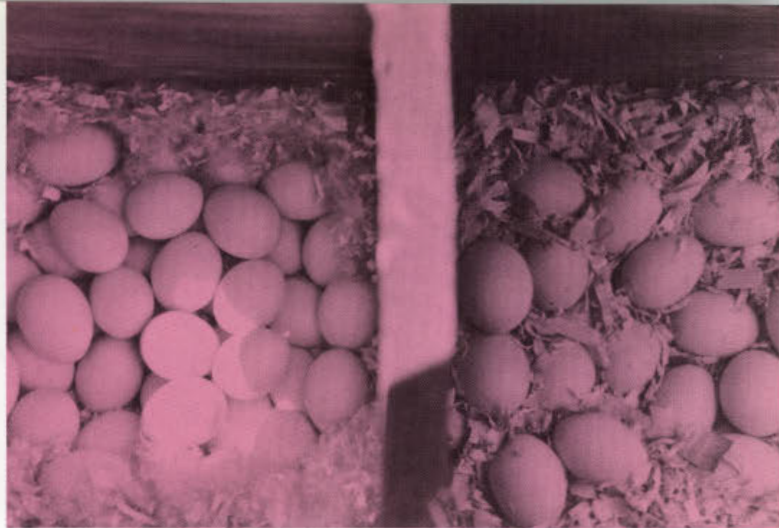
NOAA's support was crucial, but the Shuttle Experiment could not have taken place without a remarkable cooperative effort between state and local agencies. The Dover Township Sewerage Authority provided the parking lot, close to the Garden State Parkway turnoff for Island Beach. The New Jersey Highway Authority arranged for, and helped place signs announcing when the parking lot at the beach was full, and directing drivers to the Beach Shuttle. The authority, which operates the Garden State Parkway, also helped distribute literature promoting the Shuttle. The state Department of Transportation secured the services of a bus company, Lincoln Transit, and helped design and run the project throughout the summer. Lastly, The Ocean County Manpower Administration, with funds available under the Comprehensive Employment Training Act (CETA), made young people available to act as parking attendants and to distribute questionnaires on the buses, asking for opinions and advice.

The Beach Shuttle experiment was a success. Similar park-and-ride arrangements are used by commuters, but this demonstration expanded the idea to recreational use. DEP initiated the project because of its commitment to wise beach management. DEP is not a transportation agency, however, and, now that the feasibility of the concept has been proven, it is up to other federal, state or local agencies, or perhaps private entrepreneurs to continue the Island Beach Bus Shuttle. Then, possibly, the idea can be expanded to other locations and perhaps to other days of the week.

DEP has prepared a report summarizing the operation of the Beach Shuttle, the results of the questionnaires filled in by the users, and the lessons learned from the experiment. The report is available free of charge from the Office of Coastal Zone Management; P.O. Box 1889; Trenton, New Jersey 08625. □



Students have constructed and installed bird boxes as part of the outdoor education curriculum. Boxes are checked at Great Swamp and other locations.



Double-compartment box at Great Swamp reveals two dump nests. Clutch at right has no down feathers and hence was abandoned. Clutch at left was incubated.

Continued from page 15

CONSERVATION EDUCATION

The project involves delineation of organic and physical aspects of a pond and several woodlands. Pupils not only study two portions of one broad-leaved woodland adjacent to our school, but also investigate another wooded area at Great Swamp. Each study site is marked off with string and wooden stakes into several quadrats, each measuring about 64 square feet. The group is then divided into teams assigned specific tasks. While one team identifies, measures and maps the vegetation in each quadrat, another does the same with animals, both micro- and macroscopic. Still others secure data on soil, air, water and animal temperatures; soil and water chemistry; and water depth. With the permission of Refuge personnel, some plant and animal collections are taken back to the classroom for further analysis. All information is compared and correlated. Written reports are submitted which include tables, graphs, maps, and any other illustrative techniques.

Back at school, teachers from other disciplines are invited to contribute. Because the history and culture of Great Swamp inhabitants have been well documented, much time can be devoted to geography and social studies. The math teacher can contribute lessons dealing with graphs and charts of the collected data. The English teacher can evaluate grammar, punctuation, word usage, and spelling in the written

reports. The audiovisual department prepares films and slides of the outings. Foreign-language people can work closely with the social studies department, discussing the origin and fate of immigrants who settled in the Great Swamp region. Folk songs about environmental issues or the lore and legends of Great Swamp are handled by the music teachers. They can also demonstrate primitive musical instruments made from Great Swamp timber. The shop teacher helps students make such implements while the art department sponsors a wildlife art show of student photos and paintings.

Political Ecology

Since most youngsters become voters, proper conservation education demands coverage of current environmental issues. This has been introduced most effectively at Great Swamp during discussions of the deer-hunting controversy which became acute several years ago. Pupils are first told both sides of the disagreement on whether to hunt deer at the Refuge; they are even shown deer-management techniques and may participate in deer mark-recapture studies. They are then asked to carefully weigh all the evidence and write to state conservation groups, wildlife leaders, and other government officials detailing their opinions. A student vote can then be taken. If desired, the course may be presented as a judge-and-jury situation, with student (or actual) lawyers, refuge manager, opposing

groups, jury, judge and audience. The whole thing can be presented as a school play, with help from the drama teacher. The shop teacher and students can build a mock voting booth for the production.

Bird-Nesting Studies

Pupils have constructed, installed, and checked nesting boxes during another outdoor minicourse. Pine or cedar is assembled by youngsters in the wood shop into boxes of different sizes for bluebirds, flickers, wood ducks, and other hole-nesting birds.

These are installed in habitats near the school or near Great Swamp. They are inspected periodically along with boxes already present at the Refuge. Such boxes include both single- and double-compartment types. Each inspection involves recording the date, time, box type, habitat, number of eggs present (if any), status of the nest (whether or not the nest has been deserted or incubated), and other data. Custodial duties include removal of dead young and nonviable eggs. If the nest has hatched, the egg shells and membranes are also discarded, along with down feathers. If needed, new wood shavings are added since many species won't add their own nest material.

Thus far we have primarily studied nesting wood ducks in these boxes, although some owls, American kestrels, and starlings also use them occasionally. You can imagine how students must feel when they discover eggs or hatchlings in boxes



Cloacal temperature of immature green frog is measured both in field and classroom for comparison. Body temperatures are then correlated with differing environmental conditions.

Small invertebrates are taken from soil sample and placed in jars for later study either in the field or at the classroom.

they have built! That feeling itself is worth all the trouble. Students are also highly interested in learning more about a wood duck phenomenon termed "dump" nesting. A dump nest results when two or more females lay eggs in the same nest over a 24-hour period. This can be a boon or a bust for wood duck production, depending on how many additional eggs are deposited. If 20 to 25 eggs are incubated the clutch often hatches, but not if it contains 30 to 50 or more eggs. The Refuge record is 68 eggs, found by a student in 1977. Wood ducks normally lay 10 to 15 eggs per clutch.

Nesting Canada geese have likewise been investigated over the years at Great Swamp. They nest either in grassy hummocks or in specially constructed fiberglass inverted cones. Nest locations are plotted on maps, and movements of parents and young are tracked.

Again, the interdisciplinary possibilities for this course are endless. Not only is the shop teacher heavily involved, but the physics teacher may discuss and demonstrate principles of flight as well as conduction of incubatory heat from female to eggs.

Classifying Organisms

This five-day outdoor course involves the introduction of classification techniques and stresses their importance, both in scientific work and everyday life. Initially, the course allows students to devise their own classification systems. During discussions, these systems are com-

pared for their accuracy and effectiveness. Such talks likewise illuminate the danger of some other system rather than a standard one adopted by all.

Pupils are shown an unusual animal or plant which most have never seen before. They are requested to write the name they would give to this organism. Names will differ, thus providing an excellent introduction to classification difficulties. The class is then divided into groups. Certain individuals are instructed to close their eyes and touch the organism before them. They record their descriptions of this organism based on touch alone.

The individuals of another group are told to close their eyes and listen to a recording of an organism (either the same as above or a different one). Youngsters can be tricked when I imitate the sound. They record their name for this organism based solely on sound.

Still another group close their eyes and place cotton in their ears. They smell the organism before them and record its name based on smell alone.

The final group open their eyes and place cotton in their ears. They describe the organism based on site alone.

All observations are compared and written reports are submitted. Each person has a different mental picture of the organism because their descriptions differ. The important thing learned is that all the senses must be used to accurately

Continued on page 32



Pupils also classify and study microscopic animal and plant life collected from soil and water.



Aquatic investigations conducted by students involve the use of everything from dip nets to special thermometers designed to measure soil, air, water, and animal temperatures.

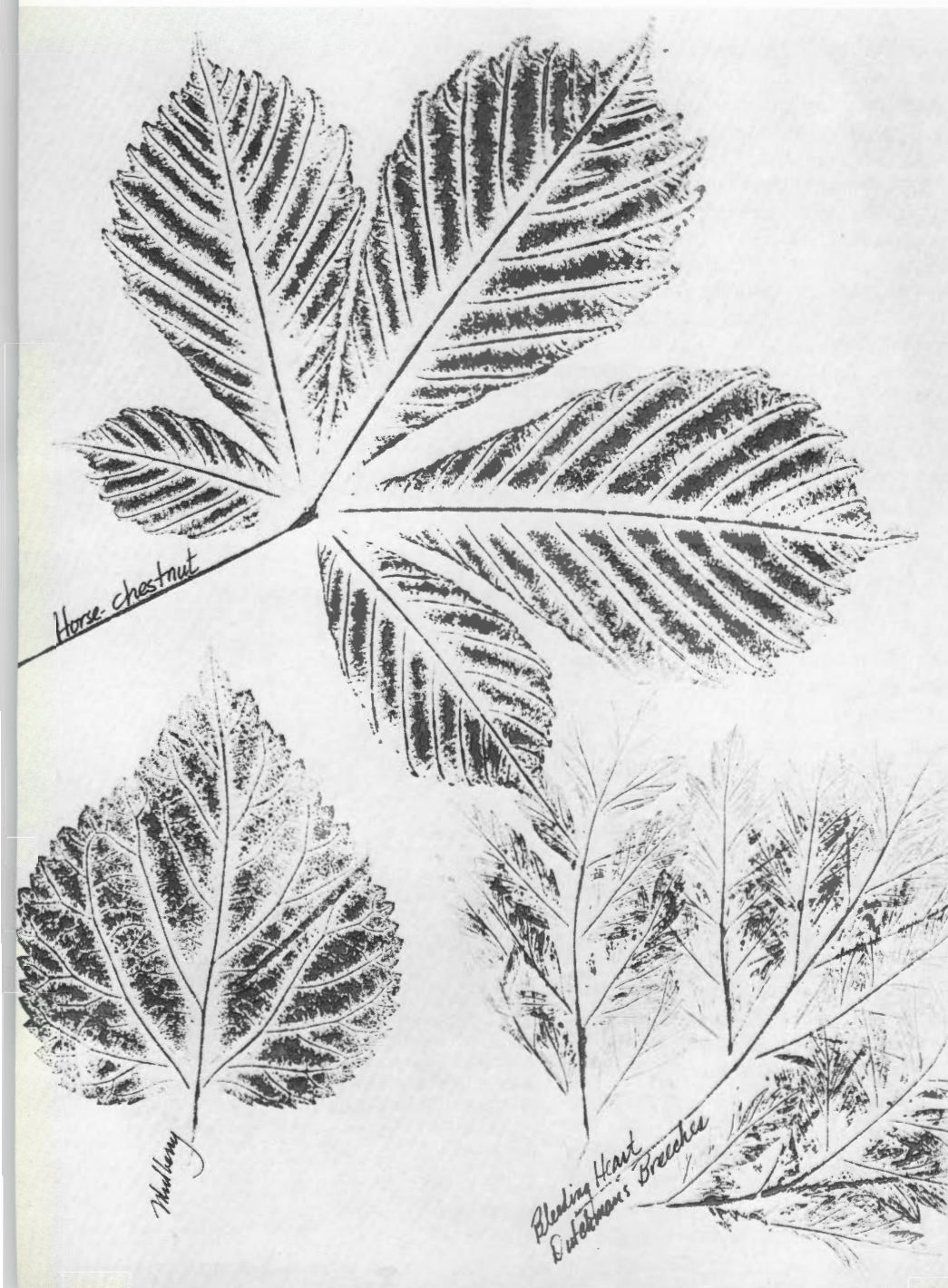
The Beauty of Leaves

The summer beauty of your woods and garden can be preserved for your enjoyment with easy to do leaf prints. All you need is some unlined paper — any color will be fine — a stamp pad which you can buy at any stationery store — some of the leaves from your backyard — and your imagination. Use it freely!!

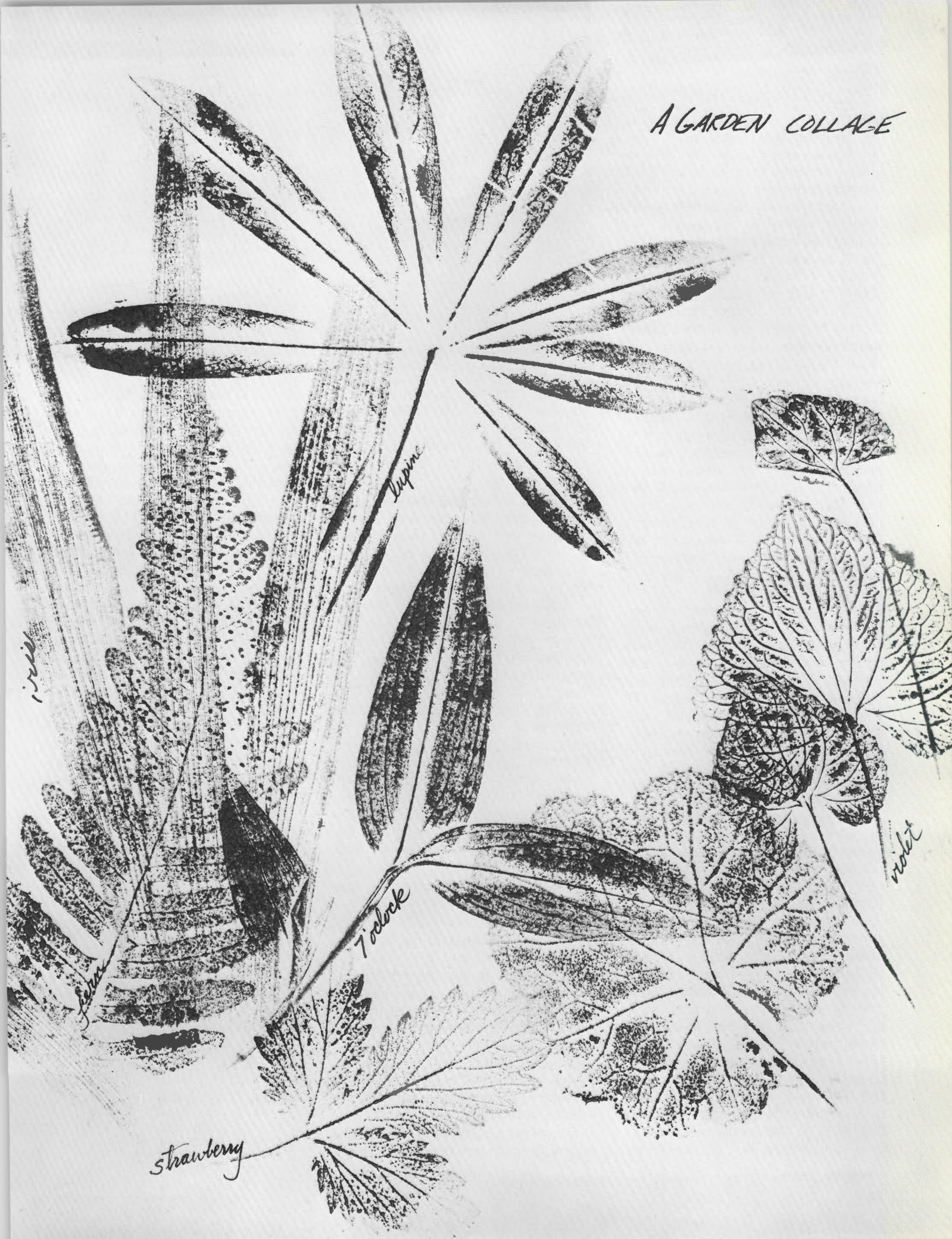
BY ART WEILER JR.

After you collect the leaves, make sure that they are clean and dry. Use a piece of blotting paper, if you have it, to press the leaves into the inked stamp pad, being sure to cover all of the underside (rough side) of the leaf. Carefully place the leaf, ink side down, on the paper and cover with an oversheet of paper. Holding the stem of the leaf in one place so the leaf does not move, rub the over-sheet with your fingers so that you have rubbed the entire area where the leaf lies under the over-sheet. Do not press too firmly or the leafprint will be blurry. Remove the oversheet *very carefully* so the print does not smudge. You have just made your first leaf print!

Let your imagination run free and all kinds of decorative ideas for these prints will come to mind. Large murals are possible using "leafprint painting." By using block print paint instead of the inkpad, you can do prints in color!



A GARDEN COLLAGE



iris

lupine

violets

Toadlock

strawberry

fern

Continued from page 7

"Patch" Hunting

the firearms season came upon us, my brother Tom, my father, and I were confronted again with the decision of where to go to hunt. Should we go north, wait all night on line in the cold, rub elbows with everyone and his brother in the woods, — or should we stay home and "patch" hunt? Needless to say, patch hunting won out.

Opening day passed fairly uneventfully except for another incident that helped to solidify my attitude toward patch hunting.

As I was driving home for lunch I noticed a tired hunter standing beside a deer he had apparently just dragged out of a small patch of woods that I passed every day on the way to work and never paid particular attention to. This fellow had just bagged a 15-point nontypical deer that had the finest set of antlers I had ever seen on a deer taken in Monmouth County. I helped him load the deer into his pickup and congratulated him on his success. The point was beginning to sink in!

I had been concentrating my hunting on an area where I had missed an opportunity at a fine 4-pointer during bow season. Using the same tree stand, I finally got a chance at the 4-pointer on Tuesday at dusk. He was about 40 yards away and I took a shot at him; I should have known better than to use slugs without sighting the gun first. Anyway, as the deer bounded off I was sure my chances for success went along with him.

The next morning I decided to try my luck in another stand about 200 yards from my first. I knew the 4-pointer would probably avoid the other stand, so I hoped to catch him someplace else.

At 7:00 a.m. I heard the familiar sound of an unwary deer on the crisp forest floor, saw its outline still faint in the dim morning light. I strained my eyes for an antler. When I finally saw the rack I assumed that it was the 4-pointer that I had missed the night before. What stupid, dumb luck! I thought. What are the odds of getting a shot at the same deer two days in a row! The idea continued to race through my mind after one shot at 36 yards dropped the deer in his tracks. As I got down from



Left to right: John Gurzo, John Gurzo Sr., Thomas Gurzo, December 1976

the stand and ran over to the deer I was very glad to have redeemed myself after my poor showing of the day before and the fact that it was the same deer made me feel that much better.

Complete shock and disbelief set in when I saw that this was not the 4-pointer but a nice, thick-antlered 8-pointer! Where did he come from? Where did he come from? I kept asking myself. I had hunted this patch all bow season and seen only one antlered deer—that 4-pointer. Where did *this* one come from? I was proud of the trophy but also very amazed that I had not seen him before.

Since this was also a relatively small patch of woods, I figured the odds would be pretty good that the 4-pointer would still be in the area come Saturday. It took some persuading but I finally talked by brother Tom into going in after him. On Saturday morning, at 8:15, he shot a fine 7-pointer less than 100 yards from where mine was taken.

Needless to say, Tom and I are now firm believers in "patch" hunting.

Our experience this deer season helped to bring several points home. First, there was less pressure from other hunters. In four days of hunting we saw only *four* other hunters. Second, the convenience of hunting close to home allowed us a restful night's sleep the night before, instead of spending that time waiting in line. Third, we enjoyed the convenience of a midday pit stop for lunch and relaxing.

Of course, comparing my experiences up north and down here, there

are fewer deer down here—but also fewer hunters. Possibly because of this light hunting pressure, the deer get a better chance to mature down here. The antler development on all of the bucks I've mentioned was good to excellent and they all dressed out between 115 and 155 lbs. It's hard evidence to refute.

So take another look around your neck of the woods before you write it off and decide to give up a night's sleep, \$10 worth of gas, and some elbow room. Chances are that if there were deer in your area before suburban development, they will still be there as long as a few "patches" of cover still exist. They'll have adapted to their new environment, for after all adaption is their specialty. Since it isn't yours, the idea of patch hunting might take some getting used to—but I suggest that you give it a try. □

Author, December 1974



Continued from page 17

Christmas Tree

Concolor Fir—Needles flat 1 to 2 inches long, pale blue green irregularly arranged and curve upward and outward. Excellent needle retention. This species not readily available.

Fraser Fir—Needles $\frac{1}{2}$ to $\frac{3}{4}$ inches long, dark green on upper side and light green underside. Excellent needle retention. Not readily available.

Balsam Fir—Needles usually flattened, short $\frac{1}{2}$ to $1\frac{1}{4}$ inches long, dark green, rounded, excellent needle retention. Not readily available.

The New Jersey Christmas Tree Growers Association has conducted a marketing survey since 1966. Tree choices and tastes seem to be changing. In 1966, the percentage of Christmas tree species sold at farms were as follows: Spruce 66%,

Pine 20%, Fir 13%, other 1%. The survey showed that in 1976 the percentages were: Spruce 45%, Pine 41%, Fir 14%. Scotch Pine is still a favorite tree, but recently White Pine is growing in popularity along with Colorado Blue Spruce and Douglas Fir.

New Jersey growers will have 200,000 Christmas trees ready for sale this year. Many families buy "dug" trees for the Christmas Season. After Christmas, the tree is planted in the yard and makes a beautiful ornamental specimen. A word of advice is that the hole for planting your balled Christmas tree after the Yule Season should be prepared well in advance of freezing weather. Have you ever tried digging a hole in January!?!)

To get a tree of your choice, it is advisable to call a few Christmas tree farms to find out what species are available and the hours of operations. Then visit the farms at least two weeks before Christmas and select your tree. If you do not know where to go for a real natural tree, check with your County Agricultural Agent or Area Forester. For a list of Christmas Tree Growers in New

Jersey, write to:

New Jersey Bureau of Forestry
P.O. Box 2808
Trenton, New Jersey 08625
Phone — 609-292-2531

Once you have purchased and brought your cut tree home, Gordon Bamford, State Forester, has some advice for you. In order to maintain tree color, reduce needle drop and keep the tree moist and fragrant, a few simple rules should be followed:

Place the tree in a bucket of water outside or in a cool place until you are ready to decorate it. When it is time to bring the tree indoors for decorating, make a diagonal cut across the trunk about one inch above the original one. Keep the cut surface completely covered with water at all times. Trees can absorb up to a pint of water a day so frequent checking and watering is necessary.

There is a Christmas tree farm in New Jersey within a short drive of any metropolitan area. Why not join many others and take your family to the country and choose and cut your own natural Christmas tree. You don't have to bring a saw and you may even get a tree with a bird's nest in it! □

Colorado Blue Spruce



Douglas Fir





1



2

Steven Althouse (Age 15)



3

SENIOR DIVISION:

- 1 1st—MELISSA COLLIMS, Age 14
Seaside Heights,
Brown Pelican
- 2 2nd—STEVEN ALTHOUSE, Age 15
Ocean Gate
Big Horn Sheep
- 3 3rd—KATHY TODD, Age 16
Toms River
Manatee
- 4 4th—KAREN CHRISTIANSEN, Age 18
Brick Town
Red Cockaded Woodpecker

JUNIOR DIVISION:

- 5 1st—SUSAN MULRENAN, Age 11
Spring Lake Heights
Kirtland's Warblers
- 6 2nd—LAURIE GRAICHEN, Age 11
Seaside Heights
Grizzly Bear
- 7 3rd—MARC COTE, Age 11
Toms River
Whooping Crane
- 4th—DANNY GIBLIN, Age 11
Jackson
Fox Squirrel



4

5



6



ENDANGERED SPECIES ART CONTEST

BY
A. MORTON COOPER

The prime thrust of the contest is to focus attention on the plight of various non-game birds, mammals, reptiles and other creatures whose very existence on this planet is endangered or threatened. It supports the State's Endangered Species and Non-Game Project and teaches the students, their parents and their teachers the interdependence of living things and their relation to the environment.

Ocean Nature & Conservation Society's third annual endangered species art contest produced some of the finest drawings yet received. More than 250 entries were sub-

mitted by boys and girls ranging in age from 8 to 18. So many fine drawings and paintings were entered that the judges had a difficult time deciding the four winners in each class.

The endangered species prizes were presented to the winners by Paul D. McLain, Deputy Director of the Division of Fish, Game and Shellfisheries, who heads the Endangered Species project in the state. In addition, scholarships were awarded to the first-place winner in each division by the Ocean County Artists' Guild. □

7



ghost mines

economy generated from it. Franklin was fast becoming a "company town." The original mining operation, called the "Sussex Zinc and Copper Mining and Manufacturing Company," was now to be called simply "New Jersey Zinc Company." So well did the marriage of company and town work that Franklin had gained the reputation of "America's model mining town."

During the 1920's and 1930's, the town grew. Miners were needed and the lure of the mine brought large numbers of families into Franklin. These miners were coming from many parts of Europe as well as from the United States, and with them they brought a distinctive character—a character found only when a variety of ethnic backgrounds are blended in a particular place. And, being situated in the valley of the Walkkill River, Franklin was within sight of rich dairying and agricultural lands. The resulting mix of miners, farmers, business and trades people, and professionals saw the town's character develop into a rich and unique cultural heritage. This very heritage would enable the town to prosper and grow even after the mining operation closed, as close it did. . . .

On September 30, 1954, the last skip of zinc ore was surfaced at the Franklin Mine. An era of zinc mining was officially ended in that town. Shafts were sealed, gates were locked, and even the buildings would be demolished into memories. The mine would become a "ghost" but its town would live.

A century and a quarter after America's first successful zinc mining and milling operations began, Franklin is still enjoying its mining heritage. It has several "dumps" which are open to rockhounds. It boasts two mineral museums and even a walk-thru replica mine which adds an extra dimension to the memorabilia of the mining era. Every year thousands of people from all parts of the United States gather in Franklin to participate in one of the largest mineral shows of its kind held anywhere in the country. Called the annual "Franklin-Sterling Mineral Exhibit," the show is host to both amateur and professional "rockhounds" lured by the phenomena of fluorescent minerals and the mystique of the zinc mines.

The "ghost" mine has bestowed still another distinction on its town—that of "Fluorescent Mineral Capital of the World." Added to this honor is the fact that Franklin sits atop a mineral potpourri containing more than 250 kinds of minerals—and 20 of these are found nowhere else on earth!

Franklin is today considered one of Sussex County's most progressive rural centers. The town's population has climbed to more than 4000, but its most notable achievement has been in its quality of uniqueness. Franklin wears a very special cloak of individuality. The complexities of geology have molded its character and cultural diversity has developed its personality. □



Reduced to rubble and sold for scrap, these are the only remains of a zinc mine and mill that produced a half-billion dollars' worth of ore in 125 years of operation.

Continued from page 9

Close to Home

denly spotted a grey squirrel racing through the branches thirty yards from me. I put my gun up and fired but missed as the squirrel scurried to its hole unhurt. As I watched the nest, two squirrels were chasing each other up the tree out of range

of my gun. Soon they disappeared and I saw another squirrel jump to a limb fifteen yards from me and begin eating an acorn. One shot did the job. By then I began to feel the late afternoon chill. I put the squirrel in my game bag and left the woodlot. I walked to where my brother was and, indeed, he had connected on a grey squirrel.

As we walked home, Ralph and I looked back on a day we had thoroughly enjoyed. When we came within view of our house, we could see the smoke coming out of the chimney and felt a feeling of contentment, knowing that soon we would again be walking the fields in pursuit of small game. And so close to home. □

rock show

niques are faintly tinged with an accent that betrays his British beginnings. The visitor will have explained all manner of equipment and machinery, among them the quaintly named "jim cro," a device that bent and straightened the track upon which the ore carts were pulled by mules. You six-footers beware as you wend your way through the passageways, for low timbers and tunnel ceilings may provide an unpleasant surprise.

Mining zinc was not the most cushy occupation. More than 1,300 feet below the surface, Mr. Kistle endured temperatures up to 100°. Often miners encountered underground water, for which waterproof gear was provided. The deafening noise of the jack hammers must have been at times almost unbearable. Imagine the noise of a pneumatic drill in a small, enclosed space, and you get an idea of the decibel level. Also sharing the passageways were rats, who lived on leavings from the miners' lunch pails.

We have not even mentioned yet the dangers of the job. After dynamite was exploded to loosen the ore, particular caution had to be used, as cave-ins and loose overhead rock were always a threat. However, Mr. Kistle said that few accidents were purely accidental; they were the result of carelessness. Still, the danger was high and the pay low. Back in the 1930's the wage was 65¢ an hour, which was just sufficient for his needs, recalled the miner.

Geologically, Franklin is unique in the world. For one thing it rested on one of the richest zinc ore veins in the world. Now largely mined out, the ore yielded 20 percent zinc, which could be matched only by one location in Australia. Between 1848 and 1954, 22 million tons of the element was mined, with a value of \$500 million.

Without zinc, modern civilization might well grind to a halt, so dependent are we on it. Zinc is a component in everything from cosmetics, pharmaceuticals and paints to dyes, soap, and countless automotive parts. There is not a tire manufactured without its oxide, which functions as a heat dissipator.

Franklin is also unique because it has the largest number of minerals in the world. At last count some 250 had been found in the area, and an average of one new mineral is discovered annually. This present wealth was produced by a geological history never duplicated elsewhere.

Starting one billion years ago there were five mountain-building periods in this area. Some peaks reached the height of the Himalayas. Accompanying the volcanic activity was a great deal of faulting and folding of the rock material, thus allowing chemical solutions and gases to escape and alter the pre-existing minerals into new ones. This happened repeatedly, eventually producing the diversity of minerals that exists at Franklin today.

Franklin also proclaims itself the "Flourescent Mineral Capital of the World." Of the 75 minerals that flouresce, 34 are found here. They are the primary object of the enthusiastic rock-hounds who for a minimal fee

scramble over the nearby Buckwheat Dump—so named because that grass grew locally—in search of willimite, which flouresces green. Also to be found there are argonite and calcite, which glow blue and orange-red, respectively.

For a slightly higher fee there are night foragings. Under the rays of ultraviolet lamps the glowing rocks are readily visible, and even the sand under foot gives off an eerie luminescence.

The Museum is closed Mondays but open Tuesday through Saturday 9 a.m. to 4:30 p.m. and Sunday 12:30 to 4:30 p.m. Hours of the Buckwheat Dump are the same.

Museum admission fees for adults, \$1.50; high-school students 75¢; grammar school students 50¢. Admission fees to the dump are the same. Franklin Mineral Museum is located on Evans Street, Franklin, and the telephone number is 201-827-3481. □



mineral dump



CONSERVATION EDUCATION

observe and classify living things.

Materials of Instruction

As indicated by the courses described, teachers and other youth leaders can use either lots of equipment or hardly any. Although the tools are used to extend and amplify our powers of observation, pupils may become too dependent upon them rather than push their own observational potentials to the limit. Another thing: keep the equipment simple but efficient. You will be outside, so this means carrying more weight *from* the study area (if you plan to do any collecting, which itself should be minimal if at all) than *to* it.

We have been successful in bringing garden shovels, dip nets, string, stakes, hammer, hip boots, a microscope, a notebook, pencil (not pen; ink runs when wet), tweezers, several enamel trays, and glass jars. We occasionally bring field thermometers, one of which is equipped with a cord-attached thermistor probe. This can be inserted into the cloaca or rectum of any vertebrate to measure body temperature. The same instrument is used to obtain water, soil, and air temperatures. Dip nets can be homemade from fine-mesh netting attached to heavy doweling.

If you're conducting a mark-recapture study of insects, you may want fingernail polish (to mark them) and coffee or juice cans (to capture them). A woodland study requires meter or yard sticks to measure tree heights, and a tape measure to record circumferences. Measurements of soil and water acidity necessitate pH paper or meters. Bird-watching requires binoculars.

Don't overlook the possibility of guest speakers. There are many who can speak to groups either outdoors or in. Actually, effective environmental education mandates their use because one person representing one subject or specialty can't expect or be expected to sufficiently cover all aspects of the ecological milieu, especially if interdisciplinary instruction is desired. My program utilizes the talents and knowledge of teachers, refuge managers, representatives of conservation groups, wildlife photographers, and authors. I even ask parents to express their views. Their cooperation is always tremendous.

In Summary

An active environmental program is limited only by the imagination of its directors and participants. Ours grew out of the school's philosophy toward science education. This approach, termed the *inquiry method*, permits student curiosity to be satisfied through experimentation using the scientific method of problem-solving. This experimentation holds true whether it is done indoors or out, as evidenced by the accompanying data. True, many variables can't be controlled during outdoor studies. But rarely do animals behave naturally when removed from their natural ecosystems and replaced in artificial ones.

Nowhere is this more true than in New Jersey, the most densely populated state. Daily, staggering demands are placed on our remaining wild areas. Our environment is steadily becoming more manmade. This means more and more people are being separated, psychologically and physically, from their natural environment. As movies and television allow us to retain only a vicarious knowledge of natural places

and truly wild things, many people are developing viewpoints regarding wildlife which go against nature's grain.

One of these, the passive, hands-off attitude, dictates that nature can take care of itself if left alone. But because man has *not* left it alone, and because he is an integral part of the system, he must benefit both the other creatures in the system and himself by actively managing it.

Far more insidious, however, is the alarming view of modern man that more is better. This includes more televisions, radios, cars, cities, picnic grounds, and so on. For many, woodlands and other habitats are to be feared. Their concept of greater outdoor use requires first to shape it to suit *their* wants—bulldoze it, mow it, burn it, etc.—not the other way around. These people don't want wild areas—they want artificial ones separated by overpopulated wildlife ghettos. What could be more symptomatic of our growing divorce from nature?

In light of all this, the importance of *active* outdoor environmental education can't be overemphasized. Greater numbers of our youth (and adults) still think nothing of recklessly discarding trash. I've seen youngsters come off a boardwalk trail and enter a bus after supposedly being exposed to the advantages and beauty of nature, only to thoughtlessly throw their garbage out the windows as the vehicle pulls away. This is the typical result of a passive environmental field trip offered once in awhile.

But active conservation instruction, done repetitively, considerably reduces the likelihood of such incidents. And when done in an interdisciplinary atmosphere, students listen more effectively and gain a deeper ecological conscience. □

For further information, write: Stephen J. Zipko, Randolph Intermediate School, Randolph, New Jersey 07801

FRONT COVER

A New Jersey White-Tailed Deer—Photographed by Harry Grosch

INSIDE BACK COVER

Van Campens Creek off Old Mine Road—Photographed by Don Fortunato

BACK COVER

A Mourning Dove Silhouetted by a Sunset at Great Swamp—Photographed by Thomas J. Koellhoffer



